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ABSTRACT

This second issue of a new journal presents six essays all on the theme of the imagination. New programming at the Touchstone Center has begun to focus on the importance of finding new forums for reflecting upon the place of the imagination in people's lives. The essays in this issue come from presenters in recent public lectures and workshops sponsored by the center: (1) "The Origin of Metaphor: The Animal Connection" (Paul Shepard); (2) "On the Evolution of the Imagination: The Origin of Metaphor" (Elizabeth Sewell); (3) "Creative Imagination" (Roger Lipsey); (4) "Empty Cups and Secret Lanterns: The Rewards of Idleness" (Ellen Dissanayake); (5) "On the Mythic and Poetic Imagination in Learning" (Kieran Egan); and (6) "Learning and the Imagination" (Howard Gardner). (CR)

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The Touchstone Center Journal

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Writings on the Imagination

by

Ellen Langer, Maxine Greene, Howard Gardner

Arnold Berleant, Jack Fruchtman, Jr.

The Touchstone Center Journal

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by

Ellen Dissanayake, Kieran Egan, Howard Gardner, Roger Lipsey, Elizabeth Sewell, and Paul Shepard

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Introduction

In a world, seemingly brought together more by its electronic ears and eyes, it is easy to forget the sustaining power of the individual human imagination to integrate our experience and knowledge. It is equally as easy to take for granted the origins of the imaginative process in ourselves. Yet to be complacent about the very notion of the imagination is to overlook what might be our most significant human ability to move us through the enormous complexity of decisions as we enter the next century.

With this in mind much of the present programming of The Touchstone Center has begun to focus upon the importance of finding new forums for reflecting upon the place of the imagination in our lives. By initiating discussions in a variety of workshop settings with persons from a wide spectrum of backgrounds, it has become apparent that in the very act of attempting to articulate the imagination's meaning and purpose we have begun to understand more fully its primary importance in human development and activity.

The Touchstone Center Journal is meant to be a further outlet for this forum of reflection. Its publication is seen as a way for persons interested in discussing the imagination to probe — and hopefully by example, to inspire others to seek their own definitions of imagining.

This first issue of the Journal has come from presenters in recent public lectures and workshops sponsored by The Touchstone Center. Elizabeth Sewell, Paul Shepard and Roger Lipsey were speakers in a series of lectures entitled *On The Evolution of the Imagination* at the American Museum of Natural History in the Fall of 1994. Howard Gardner and Kieran Egan were speakers at the Center's annual *Learning and The Imagination* workshop at the Abrons Art Center of the Henry Street

Settlement in the Spring of 1996. Ellen Dissanayake was asked to contribute to this issue of the Journal because of her interest in the biological sources of the imagination.

The cover for the Journal is a reproduction of calligraphy by the celebrated Chinese artist, Wang Fangyu, commissioned by The Touchstone Center on the occasion of its Twenty-fifth Anniversary. The Center asked Professor Fangyu to create a calligraphic representation for the word 'imagination' — and he arrived at a symbol which, when translated, means, "Thought is beyond the Universe!"

We sincerely hope this and further issues of The Touchstone Center Journal will be a part of on-going dialogue around the many qualities of the imagination. Certainly by bringing these writers and their readers together we assume a certain kind of imaginative understanding will have begun to resonate — and eventually, over time, touch others equally concerned for the preservation of this most profound source of our thought.

– Richard Lewis

Director, The Touchstone Center

The Origin Of Metaphor: The Animal Connection

Paul Shepard

For twenty years I have had an intermittent meditation on the bear. I have come to see that the image of the bear represents far more than the animal itself, and it seems possible that the whole of the animal kingdom could be regarded as having a parallel history to that of its biological evolution. That history is an elaboration of figures in the human imagination in which the animals become players in the emergence of human self-consciousness.

The noun "bear" comes from an Indo-European root term which also gives us many other words such as bury, borrow, burrow, bereave, bairn, birth, bier, which have to do with death and birth. As a process, the bear becomes a verb that linguist George Ruhl has called "one of the basic verbs of the language . . . irreducible" to further definition.

The dozens of meanings of the verb "bear" conform to one of three general meanings: to carry or transmit, to give birth, and to hold to a course, each with a place in cosmology. In the rich mythology of the bear, transmitting food and spiritual blessing takes place on earth, giving birth occurs in the underworld, and holding a course refers to the night sky.

If we suppose that these concepts and terms belong to a time when speech was in its infancy, the first glimmerings of analogy were made possible by using a limited vocabulary in multiple meanings, a time when abstractions demanded, as they still do, some reference to the tangible world. The bear was at the center of this transformation from natural history to cognitive history. The great bear was the best and richest gift of winter foods. She was the seeming virgin mother, bringing forth her young from

the winter den, as though from the womb of the earth. And each bear was a traveler in 500 square miles whose timing so conjoined place and season that she seemed never to be lost and always in tune with the schedule and geography of all ripenings, hatchings, and spawnings.

Only from her natural history can we hope to grasp the cosmic scheme of *Ursa major*, the constellation that dominates the northern sky, the passage maker around the Pole star in *Ursa minor*, a bearing taken by human travelers. Only from her natural appearance as the giver of life in bone, fat, glands, skin, and meat can we catch the significance of the sacramental meal. And only in her natural descent into the earth can we understand her guidance in the netherworld, from which birth and rebirth take place.

We ordinarily think of allusion to the cosmic bear in stories as illustrations of ideas, but I am suggesting the opposite, that these references to the heavenly bear, the giver of sacred food on earth and the underworld genetrix, are based on natural observations, made by our ancestors with scrupulous attention for a million years, as they began thinking about themselves philosophically. Conceptions of the spirit bear took shape from the actions of the animals themselves. Ideas about the structure of the word — about heaven and earth and the underworld — as performed by the bear became our way of grasping the human significance of those natural phenomena.

The great zoo of animal infinitives — to bear, to lark, to hound, to quail, to worm, to badger, to skunk, are likewise irreducible, because they are basic instruments connecting speech and consciousness. By that I mean self-consciousness, because they are verbs that describe our actions.

These conventional behaviors by which language characterizes each species, are, of course, isolated, almost detached from the true animal. To quail, crouching tremulously before an oncoming danger, is but a single aspect of

the life of a quail. How and when did we begin to abstract meaning in this way?

Perhaps it came from tracking, as though all quests converge on the horizon of forgotten time in some primal activity. As our ancestors became hunters, they plunged, late arrivals, into an old, savanna game of brain-making by means of clues. The evidence of seventy million years of mammalian predator-prey relationships in open country is given in the expansion of fossil crania, the stone signatures of bony brain cases. The scenario is one of reciprocal, strategic pursuit and escape in which the amount of brain beyond that necessary for routine body functions is the measure of intelligence, which slowly increased in both predator and prey as they reckoned each other over the millennia.

As our forebears entered this long-standing counterplay among very intelligent carnivorous competitors and almost as bright, hoofed, prey species, let us imagine a sequence. Over time, mind refined the means of discovering and identifying the presence or location of potential prey and dangerous competitors. At first the others were merely heard, seen, or smelled, their location enhanced by inference from the calls or actions of bystander animals, such as birds. Then we were able to recognize droppings, nibbled stems, beds and tracks, each with a temporal dimension, an age. In time we added the ability to discriminate indirectly individuals by sex, age, and physical condition from signs, and to anticipate their direction, movement, and awareness of our presence. Add to this ambushing, running in relays, and cooperative stalking not only as skills but as conceptually sophisticated minding — as both predator and prey became sensitive to the daily and seasonal patterns of each other's movements and use of terrain — players weaving themselves into an ecological and cognitive fabric. Finally, rehearsing, ritualizing, and planning, all based on representations of animals, mark the elegance of the human endeavor and bring us to the

world of signs and symbols. The others, at first recognized only in themselves, came at last to be hinted into existence, presences in their physical absence, to live as a body of signs.

But this is not all, and here is the crucial point. We brought to this world of insight and inference, to the natural and made representations, a distinctive primate preoccupation, which might simply be called, Self and Society. Whether in tranquillity or a frantic interpersonal scramble, the higher primates are and our ancestors probably were ceaselessly appraising and interminably testing their status, membership, accessibility, and vulnerability within their own group. If the other higher primates had developed the figurative means of employing the images of other species in speech and art to represent their social concerns — they would be us.

So, consider the hunting mind, surrounded by minute signals, tracking the Others by the signs which marked their identity, condition, activity, emotions, and health. Consider the hunter gathering bits and pieces that could be worn, danced, drawn, and abstracted to evoke ideas in a social context. In sum, a world of traces of animals living in the ecological community provided an imagery that became embedded as the means for self-conscious primates to comprehend and articulate their own personal concerns. This idea of life as a quest among secret meanings and the perception of animals as a language about ourselves was not genderized in the conventional idiom of ***man*** the hunter and ***woman*** the gatherer, but was culture-deep, demanding prescience of ***all*** members of the human group.

It is not only in human evolution that the animals — and in a slightly different way, plants — were essential to the emergence of mind but in the growth of the individual as well. The long course of our prehistory has shaped us, predisposed us to give attention in certain ways. There is the obsessive agenda of every small child, regardless of

culture, in unconscious collaboration with parent or caretaker, to name the animals. The animal species system in nature is the least ambiguous categorical model in the world. It is the doorway to cognition.

Category-making in speech is the essential step to mind, without which no abstraction, indeed, no thought as we experience it is possible. This achievement in childhood is centered in the child's simultaneous interest in animals and anatomy — in eyes, ears, nose, bellies, elbows — revealing an innate desire to perceptually dismember the body (just as the hunter literally separates the parts of the body of the prey), and to recognize unique characteristics of each part, so as to identify one animal from another and one person from another.

As time passes in individual life, many of the transitions from one state to another are, as it were, inconceivable, except as they are represented, embodied. The butterfly, the frog, the beetle, the egg, the pupa, the birthing bear, the dying swan are such embodiments. Who am I? I am he who, like the snake, sometimes sheds the skin of an older self, he who now and then reemerges from an in-between state of being briefly nobody, like the cubs who come forth from the den with their mother after a second winter, born yet again.

The thresholds between identities, those intervals of ambiguity, are themselves marked by ambiguous animal figures, by the bat who is winged but gives milk, by the owl who calls in the dusk between day and night, by the fox who is confined neither to woods nor field. Gates, passages, entrances are traditionally guarded by statues of these apotropaic animals, protectors and guides to transformation. They are identified with the novitiates in the intervals of their nonidentity on the verge of initiation. They are the keepers of doorways and all thresholds. All such passages are temporary conditions of non-identity or ambiguity, abstracted in speech and represented in ceremony by reference to the figures of species who live in the

margins. In the West we have reduced such figures to embellishments — the lion and sphinx on the library steps, the gargoyles in the garden pools — but in the wiser majority of human cultures these guardians are seen as true spiritual powers, and their natural forms respected accordingly. We still comprehend the spirituality of animals but we call it superstition, and it is outside our rationality. In recent, world or other-world religions those animals who live between realms are often demonized because of their ambiguous qualities, and we lose or neglect that significance for ourselves.

As we mature individually, our sense of self grows, expands, becomes dense. Under our skin we know ourselves as a dark landscape of desires and fears, peristaltic rhythms, the tumult of feelings to which we have given names but which have no forms. In meditative therapy, however, this invisible population becomes accessible, mediated by surprisingly autonomous animals, who 'speak' of the troubles of the heart, the gut, the head, as though it were natural that the centers of our inmost being were inhabited by animal guides.

In our adult lives, abstraction puts yet greater demands on the active imagery of embodiment. As verbs, the animals are like separate powers, but in order to flesh out complex ideas they must be combined. So it is that every society, every culture, creates composite animals for purposes of education and religious instruction. The sphinx, the angel, the mermaid, the minotaur reveal the indispensability of the animal figure in metaphysical concerns. Each society derides the dragons created by other societies, as if they were illusory natural history, yet clings to its own as keys to the secrets of life.

So it is. At the three levels of our lives — self, society, and cosmos — there are the Others who save us from the deception of mirrors and the hopeless search for identity in our mere human reflection. Despite five centuries of humanistic insistence and a century of social science argu-

ment to the contrary, we are not our own creations. We do translate in creative ways from that vocabulary of animal reference — which first takes us outside ourselves so that we may then come back to who we are.

And why are they the best figures? Why not a language of machines, or a vocabulary of entirely 'human' imagery, or simply abstractions without reference to any physical entities?

The answer is threefold. First, we are animals. We are distinct, yet share more with other animals than we differ from them. This overlapping, the difference in likeness, is normal and natural. Any definition that relies only on opposition, that denies ambiguity and the Chinese boxes of plurality, can only, in the long view, be alienating and destructive.

Second, animals and plants are the middle ground between us and the non-living world. They connect us to the planet and make us less lonely in the celestial universe. They mediate the inorganic aspects of ourselves. They are the common ground of ours and the earth's being.

Finally, animals vitalize all the important events and processes that make up our identity, give life to our concepts of and speech about ourselves, and dispel the presumed superiority of mechanism, of bionics, of the enormous deception in electronic and mechanistic idealizing. As long as animals are the instrument of our cognition we will not surrender our organic connections.

In this world of escalating shortages and confrontations, a thread runs through the turmoil and crises. It is the definition of the 'we' and 'us' who feel ourselves at risk. The motor that drives the two dozen wars of ethnic conflict, chronic alienation, and criminality of youth, the extreme uncertainties of gender and environmental destruction is the question of identity. It is as though a plague of amnesia engulfs the world in which we suffer convulsions of desperate enactments of our possible

selves, arraigned against the others.

Intergroup conflict of one kind or another is tearing the world apart. Even our democratic process requiring a respected political opponent seems infected by this same epidemic of the hatred of the other. It is as though our war against nature were a kind of model, a kind of refinement of the fear of other species.

Insofar as self-recognition is an aspect of consciousness, cognition, and mind itself, my answer to the question of the meaning of nature is somewhat as follows: Just as the natural world provides us with the means of physical health — good air and water, nutrition, and healing substances — plants and animals are sensible figures in the health of the mind. Mind comes into existence as part of an evolutionary stream in which consciousness arises. Thought is an ecological activity, a process; we are recipients as well as actors in a world of Others.

In this process, the enigma of the self, or ourselves, is one half of a dyad. The other half is always an Other. Neither half of the dyad is comprehensible without that complementary half.

Our minds, like our bodies, still live in the Pleistocene. Nature is not scenery or the zoo in which the affluent part of the world seems to bask as though at the circus. The genesis of mind, its dynamic, was a community of life that provided the cognitive terms out of which human identity arose, in which our sense of self continues to live.

We hear much these days about the loss of species and of biological diversity, usually in terms of diminished ecosystems, destabilized environments, and the loss of unknown physical resources. I suspect that the greater loss is of another kind — the way a local fauna links the concept of the self and the uniqueness of place in different cultures. The loss of non-human diversity cripples nuance in identity. We are coarsened by the loss of the animals.

At the risk of being a little melodramatic I close with a letter delivered to me by a bear.

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• *The Forest, the Sea, the Desert, the Prairie*

Dear Primate P. Shepard and Interested Parties:

We nurtured the humans from a time before they were in the present form. When we first drew around them they were, like all animals, inhabitants of a modest niche. Their evident peculiarities were clearly higher primate in their obsession with social status and personal identity. In that respect they had grown smart, subtle, and devious, committed to a syndrome of tumultuous aseasonal, erotic, hierarchic power. Like their nearest kin, they had elevated a certain kind of attention to a remarkable acuity which made them caring, protective, mean, and nasty in the peculiar combination of squinched facial feature and general pettiness of all monkeys.

In ancient savannas we slowly teased them out of their chauvinism. In our plumage we gave them esthetics. In our courtships we tutored them in dance. In the gestures of antlered heads we showed them ceremony and the power of the mask. In our running hooves we revealed the secret of grain. As meat we courted them from within.

As foragers, their glance shifted a little from corms and rootlets, from the incessant bickering and scuffling of their inherited social introversion. They began looking at the horizon, where some of us were, both dangerous and greater substance.

At first it was just a nudge — food stolen from the residue of lion kills, contended for with jackals and vultures, the search for hidden newborn gazelles, slow turtles, and eggs. We gradually became for them objects of thought, of remembering, telling, planning, and puzzling us out as the mystery of energy itself.

We tutored them from the outside. Dancing us, they began to see in us performances of their ideas and feelings. We became the concreteness of their own secret selves. We ate them and were eaten by them and so taught

them the first metaphor of their frantic sociality: the outerness of themselves, and ourselves as their inwardness.

As a bequest of protein we broke the incessant round of herbivorous munching, giving them leisure. This made possible the lithe repose of apprentice predation and a new meaning for rumination, freeing them from the drudgery of browsing and the grip of relentless interpersonal strife. Bringing them into omnivorousness, we transformed them forever and they entered the Game as a different player.

Not that they abandoned their appetite for greens and fruits but enlarged it to seeds and meat, and to the risky landscapes of the mind. The savanna or tundra was essential to this tutorial, as a spaciousness open to infinite strategies of pursuit and escape, stretching the senses to their most distant reference. Their thought was invited to a new kind of executorship, incorporating remembrance and planning, to parallels between themselves and the Others and to words — our names — that enabled them to share images and ideas.

Having been committed in this way, first as food and then as the imagery of a great variety of events and processes, from signs in dreams to symbols in metaphysics, we have accompanied humans ever since. Having made them human, we continue to do so individually, and now serve more and more in therapeutic ways, holding their hands, so to speak, as they kill our wildness.

As slaves we stay close. As something to 'pet' and to speak to, someone to be there and to need them. To be their first lesson in otherness, we have shared their homes for ten thousand years. They have made that tie a bond. From the private home we have gone out to the wounded and lonely, to those yearning for unqualified devotion — to hospitals, hospices, homes for the aged, wards of the sick, the enclaves of the handicapped and retarded. We now elicit speech from the autistic and trust from those in prison.

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All that is well enough, but involves only our minimal, domesticated selves, not our wild and perfect forms. It smells of dependency.

They still do not realize that they need us, thinking that we are simply one more comfort or curiosity. We have not regained the central place in their thought or meaning at the heart of philosophy. Too often we are merely physical reality, mindless passion and brutality, or abstract tropes and symbols.

Sometimes we have been underhanded. We slip into their dreams, we hide in the language, disguised in allusion, we mask our philosophical role in 'nature esthetics', we cavort to entertain. We wait in children's books, in pretty pictures, as burlesques in cartoons, as toys, designs in the very wallpaper, as rudimentary companions or pets.

We are marginalized, trivialized. We have sunk to being objects, commodities, possessions. We remain meat and hides as a due and not as sacred gifts. They have forgotten how to learn the future from us, to follow our example, to heal themselves with our tissues and organs, forgotten that just watching our wild selves can be healing. Once we were the bridges, exemplars of change, mediators with the future and the unseen.

Their own numbers leave little room for us, and this is their great misunderstanding. They are wrong about our departure, thinking it to be a part of their progress instead of their emptying. When we have gone they will not know who they are. Supposing themselves to be the purpose of it all, purpose will elude them. Their world will fade into an endless dusk, with no whippoorwill to call the owl in the evening and no thrush to make a dawn.

The Others

* After his lecture for The Touchstone Center, this letter from The Others, was published in Paul H. Shepard's *The Others, How Animals Made Us Human* (Washington, D.C.: Island Press/Shearwater Books, 1996.) pp. 331-33.

On The Evolution Of The Imagination: The Origin Of Metaphor

Elizabeth Sewell

Metaphor: "presented to divination"

One cannot embark on the subject of metaphor without immediately moving into the theme of language. This is nowadays a rather perilous place, and so I want to declare at once what we are not going to do before I go on to what we are going to do. We shall not look at the various theories about the origin of language. We shall not touch on semiotics, hermeneutics, postmodernism, deconstruction, and so on, which are not my business. And since we have the word 'evolution' in our overall title, I have to say that a poet will have some difficulty with the Darwinian picture. We tend to envisage Darwinian evolution as a long, slow, essentially linear process, with, in our minds, certain implications of forms rising to higher forms. This simply will not do for poetry nor for metaphor which Aristotle (who is so much more trustworthy about poetry than Plato) claimed was the essential gift of the poet. We need, clearly, some modality of change other than the Darwinian one, and I would suggest that of Goethe, who uses change in the form of metamorphosis as a great key to his scientific-poetic thinking. In Goethe's formulation one changes or metamorphoses all the time, but always more and more into oneself. Ovid, of course, enters here, with the very word we have been using, Ovid who is so deeply ingrained in the poetic and the scientific tradition alike; and there is Rebecca West saying of his Metamorphoses that it is the first textbook on evolution.

So we circle back to our title or titles, and I have to say that the origin of metaphor, as I might see it, lies in the

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very nature of language itself, language as living organ in the mind, heart, imagination of human beings. I believe passionately that every child who does not enter the world damaged enters with a full complement of these faculties, and here metaphor begins. Call to mind what Keats says in the prologue to his *Dream of Hyperion* (I am altering his pronouns a little as he would wish were he living now): "For everyone whose soul is not a clod / Hath visions and would speak, if they had loved / And been well-nurtured in their mother-tongue." To love and to be well-nurtured in one's own language seems not too easy of accomplishment in our day. But the emphasis is clear: metaphor and poetry, metaphor as poetry, is the natural speech of us all. Coleridge will back up Keats, saying in a letter to Southey of 1801, "All men are poets in their way." I have to confess that he rounds that off by adding, "for the most part their ways are *damned bad ones.*" (His emphasis.) So much lest we get a little above ourselves.

As we proceed here we are going to use metaphor as a door or gate into the world of poetry, of dreams, theatre, myth (someone has said of myth that it is metaphor which has espoused the dimension of time), and high magic. The method by which this whole imaginative world operates is in part that of 'divination', a key word here, the active divining of a path forward. I have taken it from the wonderful definition of metaphor given by Stéphane Mallarmé in *Crise de Vers*, 1885:

> To institute an exact relation between the images, and that there detach itself from them a third aspect, fusible and clear, presented to divination.

(My very literal translation; the French has "une relation entre les images exacte," and Robert M. Adams, writing about Mallarmé's syntax says, in an admirable metaphor, that this poet places his modifier at an acrobatic distance from its substantive.)[1]

I hope that at school you were duly instructed in the difference between simile and metaphor. Simile, we are taught, says something is like something else: "My love is like a red red rose . . ." Metaphor goes much further. It says that something *is* something else, the two items to be as different as possible. An example or two: "For Orpheus' lute is strung with poets' sinews." That is early Shakespeare. Rilke in his poem on the Annunciation has the angel say to the Virgin Mary, "Du aber bist der Baum" — But Tree is what you are. Another, a little more extended, by a minor Elizabethan:

> Now what is love I will thee tell,
> It is the fountain and the well
> Where pleasure and repentance dwell:
> It is perhaps the sansing bell
> That rings all in to heaven or hell,
> And this is love, and this is love, as I hear tell . . .

A third aspect arising out of the two components of a metaphor — this is what Mallarmé's statement requires. Not all metaphor has it by any means, and again one thinks of Keats, believing as he did that every life is a metaphor or allegory and then saying of Byron, "Lord Byron cuts a figure but he is not figurative." It is as if there is some kind of energy inherent in good metaphor. The American language, it seems to me, has much more of this quality than modern English has. During the last war, for instance, when Werner von Braun was sending over his V.1s, we English called them "flying bombs"; it was Americans quartered with us in London who gave them the name of doodle-bugs which we adopted. But the absolute metaphor for them was there in William Blake: "Bacon and Newton, sheath'd in dismal steel, their terrors hang / Like iron scourges over Albion." That is the prophetic *Jerusalem*, 1804-20. This metaphoric energy comes out in ordinary American speech. You catch it in

pop music, that melancholy song, "I am a rock! I am an island!" for example, or, tougher, "You ain't nothin' but a hound-dog, And you ain't no friend of mine." There is a recent one which gives me much delight by its precision and appositeness, the television phrase 'channel-surfing'. A good metaphor, though not, I think, divinatory.

The claim that something is something else takes us at once out of our habitual world of common sense and logic. It admits to another and different method or a different field, a useful word here with its suggestion of electrical charge and also of an expanse of meadow — images that may mingle to embody the memory where sparks may fly from place to place, giving us metaphors and also ideas since this is where both come from. In this way of working, analysis, almost the only technique our current schooling knows and teaches, is useless. This method works by synthesis. Everything connects with everything else, a universe of multiplicity. Everything is more than one thing, more than just itself. As you think, you become what you are thinking about. There is a beautiful Whitman poem that describes this in *Autumn Rivulets*:

> There was a child went forth every day,
> And the first object that he look'd upon,
> that object he became . . .

The early lilacs, the new small pink pigs, the water-plants, humans of all kinds, the ship going out with the tide — "These became part of that child who went forth every day, and who now goes, and will always go forth every day." (Two dates given for the poem, 1855 and 1871). We should be mindful also of an earlier voice, William Blake again, repeating to us insistently, "They became what they beheld." (I promise here not to get on my soap-box about television, but do ask you to bear those sobering words, 'you become what you behold', in mind.) There are ways to imaging how one may divine one's way forward in this

different universe. Thinking in clusters, working from the center outwards, would be helpful, and with this goes the rule never to use lined paper when thinking thus, because it compels one into linearity, or if one is moving up and down, into ladders or lists. Concentric circles would be another possible image for the process, and I sometimes imagine sliding glass plates, one above another, where the eye can gaze on one level and then move it and pass through to another lower one, as far as penetration can go. Those who want to think and imagine must experiment with such devices for their art.

We have also, when dealing with metaphor and poetry, to shake the linearity of time and its accompanying concept of 'progress'. The trouble here is that poetry, unlike science, has not moved forward. Rather it began in our tradition with unexampled greatness, and we are now going to turn back to those beginnings, ready to pay attention to one of the great metaphors enshrined there. Our goal is the *Aeneid* of Virgil, but behind Virgil is Homer, whose *Odyssey* as a whole was regarded as a vast metaphor of our human life, its wanderings and tribulations and ultimate return home. (Behind this again lies the epic of Gilgamesh with its divinatory and metaphorical quest and sufferings.) We shall look at a passage from Book VI of the *Aeneid*, where the Sibyl addresses Aeneas before sending him on his way to the world of the dead, equipped with the golden bough. We will have it here in Sir Walter Raleigh's translation, part of his *History of the World*, which he wrote while a prisoner in the Tower of London in the early years of the seventeenth century. His life, too, is metaphor; indeed that whole cluster of men round Queen Elizabeth I played in their own minds a role in the masque of government and exploit. Raleigh's nickname at court was 'Ocean' which he played to the Queen's 'Cynthia' which is one of the names for the Moon, by whom, of course, Ocean is swayed. The metaphor, the life-image by which one might hope to divine one's true

course, is the subject of his long, strange poem, "The 11th and last book of the Ocean's love to Scynthia" — and did he only write that last book, or where are all the others?

Here is his version of the Virgilian Sibyl's speech:

> The heaven, the earth, and all the liquid mayne,
> The Moones bright Globe, and Starres Titanian,
> A Spirit within maintaines: and their whole Masse,
> A Minde, which through each part infus'd doth passe,
> Fashions, and workes, and wholly doth transpierce
> All this great body of the Universe.

These lines of Virgil are a *locus classicus*. They show up all over the place, embodying as they do one of the greatest metaphors of all: that the universe is body, mind, and spirit, hence also that each one of us possessing those qualities is a universe or, perhaps better, *the* universe. The very setting of this oracle in the long poem from which it comes (and no less in the *Odyssey* which Virgil is reworking) offers clues for what divination may be, a heroic voyage to the land of the dead. That, when you think about it, is the land of the past, the land of Memory, and the journey there is undertaken in order to consult those who, dead though they are, yet know about the future and have the gift of Prophecy. Thus Memory and Prophecy, native powers of every thinking and imagining mind, are here conjoined, and a little further light is thrown by myth and metaphor upon what divination may be.

Where did we begin to lose this understanding, this readiness to think and imagine, to move backwards and forwards into past and future time, between dream and waking? Obviously one cannot pin down such slow and massive changes to a date or a decade or even a century, but my own mind returns often to that third dream of René Descartes, November 10, 1619, the dream experience which he named 'Olympica' as if he had been with the gods that night, and which, as he claimed, opened his life-

work to him. (The best account of these dreams and their implications for our Western culture we have from a poet, Muriel Rukeyser in her wonderful book, *The Traces of Thomas Hariot*.) Briefly, Descartes sees himself, in the last of three dreams, at his work-table, searching in an anthology of Latin poetry for one poem which begins, to shift it over into English, "What path of life shall I follow?" The poem is by Ausonius. Then he sees standing by him a man who offers him another poem by the same author, saying it is a better work. This poem begins with the words, "Est et non" — it is and it is not. Descartes rejects this proffer. With it goes, metaphorically or symbolically, the whole range of metaphor, poetry, the equivalence of opposites, divination; and in their place come required doubt, belief in intellect alone, the concentration upon mathematics, science, technology, and power, with all that follows. William Blake comments forcefully on this, in a passage which recurs in his Prophetic Books; I quote from *Jerusalem*, Chapter 3:

> In ignorance to view a small portion & think that All,
> And call it Demonstration, blind to all the simple rules
> of life.

So now as against Divination we have Demonstration, as if these were giant contestants facing one another in a deadly duel.

The warning voices are already loud and clear by Blake's time, nearly two hundred years ago from where we now stand. What they, the poets, utter could be read as a passionate defence of imagination against the idol of rationality, but it is more centripetal, more integrative, than that. The two great powers of the mind are not hostile to one another. Indeed, you cannot have either thinking or imagination; you must have both or you will have neither. It is my belief that we do increasingly have neither in our current technico-manipulative methodology and educa-

tion. An earlier warning voice, Vico in his *Scienza Nuova*, 1744, says, fascinatingly: "*Homo intelligendo fit omnia*," man by comprehending becomes all things; then he adds immediately, "*Homo non intelligendo fit omnia*," man by not comprehending becomes all things. Here, too, we need Wordsworth's admirable statement which goes to the heart of what we are concerned with here:

> . . . Imagination, which, in truth,
> Is but another name for absolute power
> And clearest insight, amplitude of mind,
> And reason in her most exalted mood.

This is from *The Prelude*, Book XIII in the 1805 version, Book XIV in that of 1850. A statement of belief indeed it is, but this poet's most telling utterance on this whole subject comes, as do so many of the other poetic warnings then and since, in the form of metaphor. I am referring, as you may have guessed, to the oracular dream in Book V of the *Prelude*. The poet falls asleep in a cave by the sea-shore, and in his dream sees an Arab riding towards him on a dromedary, bearing a lance and carrying two objects, one in each hand: in the one hand a stone, in the other a shell, and the dreamer perceives them as such but knows somehow that they also both are books. The stone, as the rider in conversation hints at its nature, seems to be logical or mathematical thought. The shell "is something of more worth," and when the dreamer holds it to his ear he hears a blast of music and speech, prophesying destruction to the earth by deluge, and soon. The Arab says this is true, and he is going to bury these two treasures. He starts to ride away with the dreamer running after him, but when the latter turns his head he sees along the horizon a "bed of glittering light." The Arab says it is "the waters of the deep / Gathering upon us," and hurries on, the dreamer then in panic awaking and finding himself alone with the sea before him. Our treasures of the mind

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were and are under dire threat. May we take heed of the messengers sent to us.

I am going to end with a poem of mine, not as some sort of culmination but simply because it seemed appropriate to much that we have been dwelling on in this session, touching as it does on evolution, Darwin, imagination, the origins of things, education. Perhaps I should mention that *Trivium* was the preliminary discipline of a classical and medieval education, consisting of Dialectic or Logic, Rhetoric, and Grammar. The poem is titled "Bud and Trivium" and was published in *The Orphic Voice*.[2]

Never again lay ear against a shell:
    Already something stirs, or so it seems.
Listen only to stones who cannot tell,
    They sleep so fast, their stiff inaudible dreams,
Whispered through walls of bone into your skull.

For yesterday a bud began to speak.
    (So young? but offshoot of a classic line
Half-infinite to our poor Latin and Greek,
    Each plant a slip of immemorial vine,
And even more than we, both young and old.)

Conservative in what it had to teach,
    The mode Socratic and the theme Scholastic,
Actions and figures as implicit speech,
    From which organic *Trivium* green and plastic
As its own substance it deduced ourselves.

Showed three relations: first, that of survival,
    The *Dialectic* in the thorn and claw,
Bodily argument with every rival
    As the inflexible ruling of the law.
Here Darwin stopped, but there are two to come:

For *Rhetoric* plays with natural selection,
    Hyperbole swims and flies in red and gold;
Ingenious living similes for protection;
    Beauty's unnecessary manifold;
And *Grammar* is the dance of living form.

Was this once known and framed to education,
    High ancient code, we fools have lost the clues?
Master-vision or mere hallucination,
    Organon bedded crackling like a fuse
In the damp innocence of a crinkled bud?

Suppose it opens as we wait before it,
    A huge gold circle with a face and eyes,
Would it begin to speak? best to implore it,
    "Moon, make no mouth whose monstrous prophecies
Blow like God's horns as we go down to dust"?

Or would it simply show, in slow dilating,
    Plato and Aristotle closely curled
Inside a yellow roseleaf, speculating
    That language is the nature of the world,
And all philosophy a flowering thought?

Fierce, honey-throated, formalized, prolific,
    Anticipate in our most human powers,
The poet but a speaking hieroglyphic
    In one whole universe of continual flowers,
Shall we run, weeping, throw away our life?

Or gather little children in a ring.
And blossom into oracles and sing
That mind and word is every living thing?

1. Robert Martin Adams, *Nil: Episodes in the literary conquest of void during the nineteenth century*, Oxford University Press, 1966, p. 159.

2. Reprinted by kind permission of the Yale University Press. "Bud and Trivium" is included in *The Orphic Voice: Poetry and Natural History*, Elisabeth Sewell, Yale University Press, New Haven, 1960, pp. 417-18

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Creative Imagination

Roger Lipsey

I imagine. Hearing these words, I sense at once that to assert "I imagine" could exclude others for no reason: that I imagine, and you imagine, does not mean we need forget or think less well of one another. And already by this reflection we begin to doubt the artist's vanity concerning his or her powers of imagination. Because one often has to go away to imagine well does not mean that one need stay away. To imagine well and share the fruits of imagination with others can be a kind act, a source of enriched relationship. Whatever imagination is, conscience tells us that it helps the individual to make good things for us all that did not exist before.

I imagine. The words summon me from wherever I am. My mind, no doubt like yours, spends much of its time grazing among the objects of the material world: it skips across a tabletop, hangs itself luxuriously around an attractive face, plans its escape from threats, fulfills certain routine responsibilities such as watching my step in the street, offers unsolicited opinions about everything it comes across with the conviction of doing its job. It compares one thing with another in terms of size, surface, color, mystery. Every mind is at least a minor poet: it delights in the determined gait of small optimistic dogs in the street, clocks the passage from autumn to winter by the signs — the barer trees, the descent of darkness at earlier hours. It is, in other words, busy: the material world is its patch. It is a hunter and gatherer, and it has much to do to keep each of us oriented, safe, and interested.

And yet: *I imagine*. The words call us, at least temporarily, toward the inner resources of the mind and whole person. There is no imagination when the mind

remains entirely bonded to the outer world. Imagination is a freely improvised encounter between the inner and outer worlds. Turning inward, what does the mind discover in the vast inland sea within each of us? Here we do come upon differences among people: some by nature or training are more curious, more sensitive to the unpredictable comings and goings in the inland sea, others are willing to arrange their inner worlds restrictively through screens that narrow the field of perception and make it manageable, tolerable, understandable. Surely we all do this to some degree, but the word 'degree' implies difference. One doesn't know one's own degree: one dares all one can, one leaves the rest — whatever the rest may be — for the future.

The mind in one of its inner aspects is a place of reassembly. All of the encountered facts of the outer world and the whole of our experience are registered inwardly as memory impressions: visual images, words, impressions of sound, smell, and touch, dramatic vignettes from one's own life and those of others, atmospheres, presidential portraits, snatches of family and world history, scientific theorems, shopping lists, melodies. The outer world and all experiences are compacted into our minds in seemingly immaterial form — but the order of these things in the mind differs very much from the order that prevails in the outer world. Impressions are no doubt initially deposited in memory in sedimentary order, layer upon layer, but they tend to float up from the porous memory bed into a liquid gathering place where they drift past one another. Like undersea creatures, impressions entice one another into association: dangle odd luminescent feelers, flash bright attractive lights into the darkness, camouflage at the bottom and surprise their prey — all for the sake of association. Everything is experimentally reassembled, often with mad disregard for the order prevailing in the outer world, sometimes with a model maker's finicky concern to achieve a replica. Associations that don't 'work' in some

sense are quickly abandoned; others that reveal a virtue are sustained and explored at least for a time. Some valued associations are permanently retained: they in turn become drifters in the inner world, attracting other impressions and resuming the experimental process of reassembly. It seems to be the natural delight of memory impressions to sample association with each other. In one respect, the activity is sensual — a kind of ceaseless coupling — but it is no less true to say that it is an austere exercise in mathematical topography: a search for the fit of things. It is also blameless and potentially creative. That it occurs 'undersea', so to speak, is no more than to say that this process is inconsistently illumined by our awareness: it unfolds with us or without us, in the light or in the dark.

Who oversees and tries to draw useful outcomes from this inner wealth? The question returns us to our original assertion: *I imagine*. This sea is my sea, for better or for worse. I am responsible for it, notwithstanding that it is in part a mystery and, as far as I can tell, always will be. We relate to a mystery, rather than master it, and that is quite enough. The gods, or Mother Nature, or Darwinian selection have put this raw internal vitality within our reach, presumably because we need it, certainly for survival and of course for much more. The issue of survival cannot be minimized. We must be ready to rescue ourselves and others. Because the mind watches the outer world while remaining internally fluid, it can produce little miracles of improvisation when needed for survival. Its ceaseless mobility, which troubles meditators, is actually needed: it is a price of survival in the physical world. And meditators are not without their own resources: what they have understood will help us as we look at the work of imagination.

I am the first beneficiary of my own imaginative world, and to a degree I organize it according to my needs or at least make requests of it with some hope of receiving worthwhile responses — but to say this opens a very large question: Who am I? Partly I *am* this vast inland sea, and

partly I am something quite other. Let us try to capture, at least a little, how we actually approach an imaginative effort: perhaps this direction will reveal something about the 'I' which claims to be resident in each of us and, to a degree, in charge.

Imaginative effort implies a goal: there is something I wish to express or shape. I have a general notion of what it must be, but there are as yet no details. When I think of the 'object' I wish to create — be it a poem, a musical composition, or a new design for a car fender — it has at best a ghostly existence in my mind: there may be a promising blur, but much is undefined emptiness, more feeling than form.

I turn to myself, to all of my resources. At this moment of turning, I experience a strong positive feeling, a wish to work well, to be efficient and yet to draw from fresh resources rather than convenient cliché. This wish provides all the energy and confidence I need to begin.

The drifting associations are mobilized by this wish. They are suddenly alert, awakened; there is work to do. While it is their boundless microbial pleasure to couple and uncouple in an automatic dance, the associations are more than willing to participate in an intriguing group activity such as making something new. This is their real calling, as they are the first to admit. We need a shift of metaphor to account for their changed behavior; formerly indolent undersea creatures, they now transform into the handy, motivated elves of the inner world. Experience explains, I think, why folklore assigns creative roles to elves: they are small, quick, and filled with bright energy. Hindu myth speaks of the Maruts, the Breaths, as creative workers within us: the Breaths move with speed, mingle easily, leave no burdensome trace — much like imaginative thought.

Once informed about the project by a well-focused thought or silent statement of intention, the associations may instantly begin to cooperate. How do they cooperate?

Not by a change of method — they continue to offer sample combinations, but now they are concentrating, they know what is wanted. If the project is to design a new automobile fender, a fender such as the world has never seen, they will begin by displaying all previous fenders with tremendous rapidity. One's 'I' may not even quite recognize that all previous fenders have been reviewed, their best points noted, their worst points rejected. In fact, if one is a professional automobile designer, this review has probably taken place at some point in the past and its results are stored together in the associations, so that the review is virtually instantaneous: it is what we call 'second nature'.

Now deliberately swarming, the associations 'read' the quality of one's intention: what feeling is there, what aspiration, what technical insight? What does this man or woman *really* want to achieve? How can we help? On the basis of this rather occult examination of you or me, the associations begin again to offer samples: new shapes combined from old ones, new technical solutions based on accepted practice, derivations so fresh that one would hardly guess that they rely on previously acquired impressions. As the 'master', so to speak, of this cooperative creative process, one examines these suggested solutions and chooses among them: this works well, that doesn't. As the process unfolds, one may continue to have a more or less unitary perception of oneself. One may simply experience that 'I am thinking', or 'I am feeling my way'. This is good enough: it is not necessary to perceive the situation as a cooperative venture between a rather mysterious I, the bearer of intention, and a swarm of creative resources which are, and are not 'I'. However, ancient poets invoking the Muse, no less and no differently than Joseph Haydn asking God's help, argue from their places in history for a cooperative vision.

At a certain point in the creative process, 'I', the master, may begin to falter. The wish weakens, the attention

dissipates. There can be many causes, ranging from fatigue to a growing sense of creative disappointment. The disappointment is worth investigating. The demiurgic associations, the inner elves, have been loyally at work, but they are somehow missing the point: while I asked them for an entirely new vision, they have been encyclopedically reviewing everything they have ever perceived about the matter at hand and ingeniously deriving fresh inventions from their body of learning. But in this instance it wasn't 'the new from the old' that I requested — it was the altogether new: something as yet unseen and unmade, something quite exceptional.

This recognition can renew one's energy and, needless to say, that of the demiurgic elves. "Ah! So *that's* what he had in mind!" The demand to go beyond the known sends them in two quite different directions in the inner landscape: to the first principles from which inventions in a particular field must be derived and to the gateway of the unknown. The deliberately workaday example of fenders will again help. The first principles of fender design exist in a realm beyond any specific fender. The first principles include recognition of the multiple purposes of a fender, of the materials from which it might be made, of the processes available through which it might be made, and still other factors. These are in substance Aristotle's four causes: the concept is ancient. To return to first principles requires courage: much but not all that one knows must fall away. What remains is spare but immensely fertile. The associations continue to play a role as one ponders first principles, but they recognize that they are in touch with something greater than themselves. Lost in admiration, they are more still than before. Contemplation of first principles can, and sometimes does, lead to entirely new creations.

If required, the associations are also willing to undergo the most demanding discipline known to them: temporary surrender of all restlessness at the gate of the unknown. Associations have no power there: as they turn in that

direction, they become of necessity silent. The silence need not be long: short spells will do. When these occur, the process of associative reassembly is stilled. The associations stand aside. The master — 'I', as we must say — approaches the gate of the unknown alone in a state of inquiry and need.

As one does so, one's wish re-illumines, but it has no content; there is no image within it. One merely wishes. One is immensely alert. One brings to the gate of the unknown all that one has of mastery in one's field, but silently, unassertively. One needs it to recognize what may pass through the gate toward one and, since we all use the same gate, one needs it for identification purposes so that musical ideas are granted to musicians, new fenders to automotive engineers. If one is fortunate, there will pass through the gate into one's awareness a wholly new form, the result of no previous impression although coherent with known first principles or introducing unfamiliar first principles which are at once persuasive. We encounter here the concept of 'prototype' in its root and most challenging sense: the first manifestation of a new 'type', a new class of objects.

When the prototype is revealed, the associations, like elves, rejoice. Now that the sacred event has occurred, they can resume their task without the burden of silence — they prefer the fellowship of a noisy workshop. Their first job, as they well know, is to examine the new 'object': to reverse-engineer it. What is this object? How does it relate to known objects in its general category? What are its unique characteristics? When you prod it just here, what happens? How can we expand on it, perhaps by making other useful objects that exploit its novel features? And then, 'objects' that enter our world through the gate of the unknown are typically unfinished: the author of such things prefers seed to fruit. The workmanlike associations will know how to bring the object to completion — and as they progress may conveniently forget that the object was

given them from beyond their realm. This too is good. Whatever it is that lies beyond the gate of the unknown is not possessive, and our ownership of inspirations helps them endure.

When the imaginative effort is completed and 'I', the master of this strange ensemble, take the rest I now need, the new creation will of necessity enter the inland sea and begin to drift. Like all else in the sea, it will lazily couple and uncouple with other forms in thorough disregard of the sacred event by which it originated. This too is good: our inner lives cannot always remain at high tension and creativity. The associations need to drift and mingle while I sleep.

I imagine . . . I do not imagine! There is a natural claim within us to be factual rather than imaginative — a claim that now asks for exploration. To examine the value of being unimaginative may advance our understanding of creative imagination. There is, at least potentially, a steadiness in our minds: a pure attention that does not enter into the recombinative flow of associations. It is one of the capacities, indeed a mission of our attention to direct a cool and unmoved light of intelligence upon all things inner and outer. To the perhaps unspoken questions "What is this?" and "Who is this?" which we ask before all things and people, the attention is called to provide a factual response uninflected by analogy, by metaphor, by symbol, by extrapolation, by speculation. There is a plain infrastructure to be plainly grasped: names and addresses, scientific, sociological, economic, geographic data — and of course so much more. When the attention succeeds in remaining free from the restless mobility of other parts of the mind, it reports what is without recoiling and without adorning. Like light, it simply rests on all things and makes them visible. The world in which we live, what each of us is, and our relations are so richly complex that, to experi-

ence these things fully, one needs access to such a strong and factual attention. It is the foundation of understanding and practical orientation.

Attentiveness to fact can be beneficially carried, I think, to refined levels of experience, no longer the realms of workaday knowledge but of the arts, psychology, and the spirit. Phenomena at all levels, from the most rarefied to the most earthy, need not be understood in terms of likeness to other things: each thing is what it is with an almost defiant singularity that naturally calls forth our respect. The 'breath' of each thing, its unique signature, is best apprehended with an attentiveness that does not waver toward analogy. For some purposes, analogy is inattention. Yet the world is one, all things are tangent and mutually illuminating, and for this reason we can already foresee that the moment may come when pure attention will wish and need to call upon other resources.

The subtler sorts of fact are shy; as Heraclitus was first to say, "Nature loves to hide." Subtle facts are particularly shy in front of a restless, selfishly motivated attention; they would simply rather not appear. There is evidently a law of matching: the steadiness and disinterestedness of our attention at a given moment elicit facts corresponding to those degrees of steadiness and disinterestedness — and no other facts. We set our own perimeters and our own depths. This is cause both for joy and for anguish: joy because such rich perception is possible, anguish because one knows one's limits, and there may be no compelling evidence that one can transcend them. However, of joy and anguish much good can come, including patient transcendence of limits.

The facts reported by attention as it becomes more revelatory are endowed with a subtlety and appeal difficult to understand for oneself or express to others. True, there is a kind of understanding that has nothing to do with interpretation — one sees what is, one is content to see what is, and were one to attempt 'interpretation', the

facts before one might vanish. But such private experience is not the only one of value. Often enough, to grasp subtle facts, their relations with other facts, and their implications, and to convey to others what one has seen challenges the mind — the mind and whole person — to make use of all available resources.

Confronted with the challenges of interpretation and expression, the attention turns for help to the swirling creativity of the associations. And its call for help is answered. Now there can unfold the creative drama we explored earlier. Imagination is not annulled by attention; they are allied in the lifelong effort to live with sensitivity. To be imaginative and to be stringently unimaginative are polar opposites with the potential to form a much needed whole. Answering the call of attention, all of the imaginative resources we briefly explored stand ready to help: acquired knowledge and technique, a tinkerer's curiosity, the sweep of analogy, the encounter with first principles, perhaps even the gift from the unknown.

It is not always serious. We need only remember the vivid undersea world of a reef, the infinite variety of flowers, the lavish decorative schemes of birds to realize that exuberant adornment is not just tolerated on this planet but, in its place, expected. I am sure that a Darwinian analysis of these things would demonstrate the stark necessity for species survival of each and every radiant feather, iridescent streak, and rococo calyx. But from a lay perspective that surely also has merit, these things demonstrate something altogether different: the self-adorning, ceaselessly individuating exuberance of life. We are invited to make use of our imaginations not only heroically to construct great things or interpret great matters but also ornamentally. The work of imagination ranges from the most solemn and majestic elaboration of form to the impromptu addition of a flower 'just so' to one's hair. The extremes meet: a great artist can labor for months to capture on

canvas the careless grace of a minor gesture, and he or she will know that gesture to be not trivial at all; its confident ease is marked by something almost indefinable, something beyond itself, and deeply attractive. What is it? What is it? . . . Why is ease, even unconscious ease, so moving? What is the image of ease? Ease implies trust, fearlessness. Why and what do I fear so much, and with such concealment? The evolving image provokes a search for clarity.

A capable and affectionate imagination is at work.

Empty Cups And Secret Lanterns: The Rewards Of Idleness

Ellen Dissanayake

Along with the overabundance of consumer goods on display in the malls and supermarkets of contemporary America, we are offered a lavish array of imaginary experiences from films, television, and now CD-ROMs. We can travel vicariously to other lands, other centuries, even other planets; without leaving home we can see fabulous life forms, like scarlet-toed frogs, and unfamiliar ways of life, like those of desert nomads or swidden farmers.

The wonders available in videoland and cyberspace are magical indeed, but against a rising tide I would like to put in an old-fashioned word for the rewards of idleness. This may sound like heresy in the classrooms and neighborhoods of America, where idle children are time bombs of inattention, vagrancy, and vandalism. Keep them busy, we think, or they'll get into trouble.

Still, it seems to me that, ironically, the more people are given things to do and things to learn about, the less they are able to find things to do and learn about on their own. There is a difference and maybe an inverse relationship between passively consuming imaginary ideas or experiences and actively creating them. Along with computer literacy, we might teach young people another valuable competence: how to access a kind of software that doesn't require diskettes or even electricity — their own inherent powers of imagination.

I come to this revolutionary suggestion from my own experiences in two other societies — one in the modern West (Scotland) and the other in South Asia (Sri Lanka) — that I will recount. I will introduce these with a brief description of what may be a unfamiliar sociohistorical

frame of reference, one that leads me to view this century's headlong and heedless race into the future with some misgivings.

A Paleolithic Perspective

Although we consider ourselves to be sophisticated citizens of the world, familiar with jet travel, pocket calculators, antibiotics, recombinant DNA, faxes, and the far reaches of matter and the cosmos, we are in our inner selves not so very far from our Paleolithic ancestors. For fewer than twenty generations out of eight hundred have we lived in what sociologists call a 'modernized' society — gradually moving away from the sort of 'traditional' ways of life that sustained the previous 780 generations.[1] In these amazing social and intellectual changes from hunter-gatherer to simple agricultural societies, and now in our accelerated journey from Industrial Revolution to postmodern global society, we appear to have forsaken some things that have been and still are essential to our human nature.

For hundreds of thousands of years, people lived, with unbreakable ties to others, in small face-to-face societies in which we each had a known place. We performed appropriate life-sustaining work, valued by others, using hands-on knowledge for making what was needed for our lives. Despite the inevitable pain, illness, lack, and loss that life on earth brings, we held common compelling beliefs about the way the world was and how uncertainties could be dealt with. When we cared about something — the outcome of an endeavor, a valued person or possession, an important occasion (e.g., a feast, courtship, or funeral) — we tended to make things associated with it special, as in ceremonies, with embellishments, elaborations, dressing up, special words, sounds, and movements.

To be sure, contemporary life provides a multitude of comforts and conveniences; it also provides much stimulation, knowledge, and many opportunities unknown to

people in the past. But can we really say that we are more emotionally, psychologically, or spiritually fulfilled than premodern people? We live in societies filled with strangers; our ties to others are often ephemeral, and our sense of personal worth requires continual validation. Our work may bring many extrinsic satisfactions (money to buy the comforts and pleasures), but does it bring intrinsic satisfaction in the doing? The more we have, the more bored or unsatisfied we are: after ripping the paper off a dozen Christmas or birthday gifts, today's child is apt to say 'Is that all?', just as today's shopper is likely to have 'nothing to wear' in a closet crammed with clothes. In a complex society, there are few if any common beliefs or agreed-upon courses of action to provide emotional security that the paths we choose are inarguably the 'right' ones. We don't have the time to make our experience special or to discover, know, and savor the many varieties of specialness that are to be found everywhere. We purchase and consume our experiences, rather than finding and making them, just as we purchase and consume our food, clothing, and other possessions, and even our knowledge.

I am not saying that we should return to being hunters and gatherers; I do think that insofar as we feel unfulfilled, it is with regard to the psychological certainties and emotional satisfactions that were inherent in premodern and traditional existence, but that our present way of life largely ignores.

Lessons of Idleness and Solitude

When I first went to Sri Lanka in the late 1960s, I had help with household, garden, and children, but few friends or social activities. I soon found that I was 'bored'. There were no jobs for foreigners. There was no television in the country at that time; radio reception was poor and the programs awful, in any case. Women didn't go 'out' alone, but even if they could, there was nowhere to go — no shopping to speak of, and movies were mostly local

language melodramas or Singapore kung fu. At first I did all the things I had always said I would do 'when I had time': I caught up on my sleep, wrote letters to everyone I knew, played the piano for hours, read everything in sight, took walks. There were still hours of the day when I had 'nothing to do'. I knew one American woman who went home because she couldn't stand it.

What I learned from this enforced idleness, however, was that once I gave in to it, got over the feeling that it was necessary to 'do something', and just sat quietly, looking at the sky, the plants, the birds, my mind began to fill up like a well. Eventually, I took pen and paper and thought I'd try to describe what I saw: the coconut tree in a storm was like a madwoman tossing her hair; the kittens' faces looking out of their basket were like a bouquet of flowers; the little orange-breasted blue flycatchers sounded like Papageno's flute melody played in reverse. I decided to try to write a poem every day, starting from a thought or incident. Some were more successful than others, but I found that just setting down a small kernel was enough to start something that might go . . . anywhere. After forty-some consecutive poems, I realized that once I gave in to the idleness and solitude, there was an infinitude of things I could describe or connect. It was like a secret possession that made me feel good and even safe to bring to mind — rather like the enduring knowledge of a religious revelation or a secret love that is always there, providing inner strength and enrichment.

I've heard people speak of the 'danger' of 'escaping' into fantasy — the worlds of monsters, superheroes, soap operas, romance novels. This position resembles Freud's view of art, that it was a wish fulfillment or substitute for what one could not have or a sublimation of what one dared not think or do. Others, like Dickens's Mr. Gradgrind, dismiss imagination as idle because it is not 'real', factual, or immediately pragmatic. This criticism resembles those that consider art to be 'mere' embellish-

ment, a superfluous decoration, a sort of frivolous ornamentation.

Yet one finds that in many premodern societies, the extra-ordinary world of the imagination (or spirit) is usually as real as the ordinary world of everyday life. Or, better, that ordinary life is suffused with the extra-ordinary: one need only let oneself become aware of it. Communication with mysterious powers is available to all. Decoration or adornment is hardly 'mere', but rather a way of demonstrating (to the self as well as others) that a person cares about his or her life, and chooses to participate in the social and moral order. These are manifested or embodied in the arts. Not elaborating one's experience would be tantamount to not valuing it and those with whom one shares it.

In many premodern and traditional societies, the communal fantasy world may be made by others (usually long ago) and transfused into the life of the community with little amendment by individuals. It is full of monsters, superheroes, and the dramatic primal themes of love and death, loss and fulfillment, conflict and resolution that immediately and effortlessly engage human attention. Yet unlike the similar culturally transmitted fantasies of today, this extra-ordinary world is regularly and actively reanimated in social ceremonies where its power is memorably demonstrated to and shared by all, reinforcing their communality. It is not passively absorbed alone in front of a computer or television screen. To me, the 'danger' of MTV or videogames is not that they provide wish-fulfillment or sublimation, but that they fill the mind with an endless and random or interchangeable stream of disconnected information and high-impact thrills that often serve little purpose than to be an escape from boredom and loneliness.

Unlike loneliness, idleness and solitude can both be considered gifts — anything but boring. But modern society does not easily let us know that. As my solitary life in Sri Lanka was enriched and given shape by my cultivating the life of the imagination, so do I think today's children,

who often feel isolate and ineffectual, can benefit from discovering their own inner treasure, apart from all the manufactured fantasy that is a pressed button away.

In this regard, I'd like to copy a well-known short poem from A Child's Garden of Verses:

When I was down beside the sea
A wooden spade they gave to me
To dig the sandy shore.

My holes were empty like a cup.
In every hole the sea came up,
Till it could come no more.

The Exultation of a Secret Lantern

When I lived in Scotland, I found a society that some have called abstemious, frugal, even severe. I came to love the spareness and simplicity, especially compared to American greed, vulgarity, and affluence, and decided that a better way of describing the Scottish temper was to view it as nonmaterialistic. At first I also found Scots to be somewhat unimaginative — this went along with plainness, practicality, and pragmatism. Yet I think this impression was wrong, or — like calling Scots 'frugal' — did not go far enough.

Robert Louis Stevenson, who wrote the poem above, was a Scotsman, known as the author of Treasure Island, Dr. Jekyll and Mr. Hyde, and many other works. The year that I was in Scotland, 1994, was the centenary of his death. In a review of a book about Stevenson,[2] I came across a description of a childhood game that he played with other boys in the evenings at Dunbar, on the coast of Lothian (the region whose major city is Edinburgh). Each boy secretly wore a lit tin bulls-eye lantern under his coat. The only point of this game was "to walk by yourself in the black night . . . not a ray escaping, a mere pillar of

blackness in the dark; and all the while . . . to know you had a bulls eye at your belt, and to exult and sing over the knowledge."

How many children would play this kind of 'pointless' game today? The reviewer, Elaine Showalter, tells us that for Stevenson the lantern represented the "mysterious inwards of psychology," the magical bird or enchanted nightingale that sings in the forest of realism. In the pages of the realist, according to Stevenson, we find a picture of life insofar as it consists of mud and of old iron, cheap desires and cheap fears, that which we are ashamed to remember and that which we are careless whether we forget. In realism and naturalism, "life falls dead like dough," for "no man lives in the external truth, among salts and acids, but in the warm phantasmagoric chamber of his brain, with the painted windows and the storied walls."

I love these images of a hidden lantern known only to oneself, of an enchanted nightingale invisibly singing in the forest of realism, of a warm phantasmagoric chamber with painted windows and storied walls. They tell us that inside a plain, unpromising exterior may be a radiant secret core. They suggest that as much as activity and 'stimulation', children may need idleness, as I did in Sri Lanka, to realize their latent or concealed imaginative resources. Rather than deluge them with things to play with, or exhort them to fill their time profitably or even for fun or relaxation, can we not find ways to give them wooden spades to dig empty cups for the sea of imagination to fill?

Unfortunately, today's boys and girls in Lothian, as in London, Louisville, and Los Angeles, have substituted flickering screens inside their houses for lanterns under their coats. The images of their inner lives are neither exultantly their own (as for Stevenson) or powerfully and communally shared (as for premodern children). Instead their fantasies are for the most part created by others, shared with millions, yet viewed alone — thereby belonging at

the same time to everyone and no one. Their idleness, stained and pitted by the acids and salts of neglect, triviality, and phoniness, too easily becomes mischief or despair.

The much-vaunted 'virtual reality' available on the computer screen may well seem preferable to the anxiety and hopelessness that characterize 'real life' for all too many modern children (and adults). But let us realize that we could also help them to find bulls-eye lanterns and wooden spades that make possible the secret illumination or the unstoppable ocean of their very own imagination. Ever alight under one's coat, or available for digging holes on the shore, these special implements are there to be known by oneself for oneself, and (by those who, like Stevenson, are moved to share them) for others.

1. This is an excessively large fraction. Taking a generation as 25 years (four per century), twenty generations goes back 500 years to the High Renaissance, the beginning of 'modern society'. Modernization typically refers specifically to the changes that accompany industrialization (e.g., greater economic specialization and social stratification, mechanization, individualism, secularism, and rationalism than premodern or traditional societies), which occurred some ten generations ago in the West and more recently elsewhere. Eight hundred generations is 20,000 years ago, in the Upper Paleolithic, about the time of the cave paintings in France and Spain when one might speculate that cultural diversity became important. (Until then, and indeed until the development of settled agricultural communities 10,000 years ago, all humans lived as hunter-gatherers.) Hominid evolution took place, of course, over several million years, so that in actual fact, our present way of life has characterized humankind for less than 1 percent of its entire history. Twenty out of 800 generations is thus a greatly conservative estimate: it is really more accurate to say 20 generations out of 160,000.

2. Elaine Showalter. Review in Times (London) Literary Supplement #4791 (January 27, 1995) of Books by Michel Le Bris about Robert Louis Stevenson, pp. 4-5.

On The Mythic And Poetic Imagination In Learning

Kieran Egan

Introduction

Darwin provided a somewhat new way to think about, and account for, gradual change. In his major theory, "evolution" — which had derived from the Latin for "rolling out", as of a written scroll — took on a new precision and layer of meaning. His attempt to account for the differentiation of species and changes in the fossil record has led, by metaphoric extension, to the use of the term for processes quite unlike those that absorbed him: e.g. "the team's evolution from a bunch of layabouts into a well-oiled machine." A related word, "development", went through a similar process during the same period. From its original meaning. of unfolding something, it came to mean processes in which the mature final form is attained by the gradual unfolding of elements that are initially present only in rudimentary or embryonic forms. The two words developed or evolved side by side, influencing each other. One can see the influences and close relationship in late nineteenth century biological theories which proposed that the human foetus went through stages of development in the womb that recapitulated the evolutionary changes the species went through. "Development" also gathered some of its more precise and changed sense from its use in biology to refer to the theory that the embryo already possesses in rudimentary form all the parts of the mature organism — the process of development is the process of growth of those rudimentary forms to maturity.

This sense of development — even though abandoned by biologists long ago — has been profoundly influential

on education, and on conceptions of the young child as a learner. Childhood, seen through "this sense of development, is a stage in which humans possess in embryonic or rudimentary form the intellectual capacities that gradually elaborate and expand until they achieve their mature forms in adulthood. Theories of development in education have thus been what are called "hierarchical Integrative": that is, each later stage integrates the attainments of the earlier stage(s) in a higher, more sophisticated form.

I think this idea of development is inadequate to describe the process whereby human children grow intellectually to adulthood. This inadequacy is no small matter, I will argue below, because it has profoundly influenced how the child has been conceived as a learner, and this in turn has profoundly influenced the curriculum and teaching methods chosen for the early years of schooling.

The conventional modern sense of 'development' is well-suited to describe a dimension of our biological lives, as it is well-suited to describe the maturing of animals in general. The problem is tied up with human culture and the peculiarity of our evolution and development as a language-using animal. The evolutionary adaptations that have formed our genetic endowment have resulted in the uniqueness of human childhood in the animal world. Within a few years of birth, children typically learn a language and use it to form mental representations of their society and of the cosmos.

The inadequacy of the biology-derived conception of development for education is tied to this unique cultural development. The inadequacy is enhanced by our creation of an external memory store for knowledge, ideas, and feelings by means of literacy and by our teaching literacy to children so that they can access this external coded culture.

Well, this is all rather abstract. What I will try to do in the rest of the paper is show that our dominant curriculum and teaching methods are indeed tied to a nineteenth-

century biology-oriented conception of development, show why that conception is inadequate to education, and show how we might find a better conception if we attend to the peculiarities of human cultural evolution/development.

Herbert Spencer, Jean Piaget, and the conception of development

One of Darwin's most enthusiastic disciples was Herbert Spencer. He was particularly attracted to extending the theory of evolution to social phenomena, coining the phrase "the survival of the fittest", which in a strict and cautious sense conforms with Darwin's theory, as Darwin acknowledged, but which can be and has been extended in loose and illegitimate ways to support unbridled capitalism and racism. Spencer also tried to apply the theory to education, leading him to frame a set of principles of educational development that were adopted by progressivist educators and which have come now to be accepted as truisms by opponents of progressivism as much as by the various inheritors of progressivist ideas.

Spencer, whose work was well known by William James, John Dewey, G. Stanley Hall, and Edward Thorndike, drew in turn on Rousseau's ideas about the necessity of adhering to nature's guidance for successful education. What Spencer had, that Rousseau hadn't, was a scientific conception of nature and evolutionary theory. From these he derived a set of principles that are no doubt familiar to every teacher in the Western world by now, in one form or another. In general he insisted that we must ensure that teaching and learning focus precisely on what the child needs "for purposes of growth" (1969, p.70). The general result that he sees is a "superseding of rote-learnt lessons by lessons orally and experimentally given, like those in the field and the play-ground" (1969, p.71).

The main principles are: "we should proceed from the simple to the complex . . . from the indefinite to the definite . . . from the particular to the general . . . from the con-

crete to the abstract . . . from the empirical to the rational" (1969, p.75). "Every study, therefore," he argued "should have a purely empirical introduction . . . children should be led to make their own investigations, and draw their own inferences. They should be told as little as possible, and induced to *discover* as much as possible" (1969, p.75). In North America these principles are better known in John Dewey's later formulations.

Most of these principles are derived by Spencer from a conception of biological development. In each case he tries to show that the "development of the mind, as all other development . . . [is] [i]n common with the rest of the organism" (1969, p.73). That is, his task has been to show how the principles of development that one finds in the rest of nature apply also and equally to the development of the mind.

Jean Piaget's influential theory is similarly built on a biological conception of development. It is an "hierarchical integrative" theory, in which the child is represented as accumulating skills in stages, each set of which is incorporated and enlarged by the further skills acquired in the subsequent stage. The process leads ideally to the complete unfolding and fullest "development" of all the skills that existed in embryonic forms in earlier years.

Spencer's and Piaget's focus is on what have come to be called logico-mathematical skills. Even though Piaget studied play and dreams, and even though Spencer declared that the "chief component of mind is feeling" (1969, p.84), when they reflect on children's development, the biological and naturalistic metaphors that governed their thinking led to a somewhat truncated view of the child's mind.

The oddity of human childhood in the natural world is due to our nature being cultural. Evolution has equipped us to develop in a pattern nowhere else evident in the natural world. We are equipped, for example, with a range of capacities required to learn very early and quickly one of

an indeterminate set of possible languages, and to adapt to and represent mentally one of an indeterminate set of social structures and learn a set of beliefs associated with it. So we pick up our society's beliefs about why we are here, who or what is responsible for the world as it is, what we are supposed to do in the situations we find ourselves in, and so on.

In order that we might manage these intellectual tasks adequately, we are equipped with some specific intellectual capacities that reach their peak in our early years and remain in some residual form through the rest of our lives, becoming more atrophied in some people than in others. So our ability to recognize and generate appropriate metaphors reaches its peak by age five, and declines, following an irregular profile thereafter (that typically includes a further lower peak around puberty) (Gardner and Winner, 1979; Winner, 1988). Metaphoric fluency is crucial in language development, but also, of course, for a range of other intellectual activities. Those intellectual capacities we rather vaguely refer to as "the imagination" similarly experience energetic deployment early in life and, typically, gradual attenuation or sclerosis as we grow older.

The profile of the development of imagination in our lives seems quite unlike that ever-rising progress from childhood to adulthood that is represented in hierarchical-integrative, biology-derived developmental theories. While we lack any precise image of the development of imagination, even the most casual observation of human beings at various ages suggests that it would be absurd to claim that imagination is only embryonically present in young children and becomes increasingly more evident, elaborate, and rich as we grow older. Educators almost universally acknowledge the energetic imaginative life of pre-schoolers, and then the dulling and conventionalizing of that energy as time and schooling go on. William Wordsworth has expressed this recognition with

unequaled eloquence. Wordsworth emphasizes that one can work to preserve aspects of that early imaginativeness, and his descriptions of how one might do this is what makes him one of the great educational writers — alas, almost totally neglected in education because he foolishly wrote in verse.

If we look at children's imaginative lives, rather than their slowly-accumulating logico-mathematical skills, à la Piaget, we do not see intellectual activity dominated by the concrete, the simple, the indefinite, the empirical, and so on. We see prodigal metaphoric invention, talking middle-class rabbits, titanic conflicts of good and evil, courage and cowardice, fear and security, and so on. Also Spencer's belief that his nineteenth-century biology-derived conception mirrored the process of "the race's" evolution is similarly mistaken. To focus on just one of Spencer's central principles, we might note Donald's observation: "The most elevated use of language in tribal societies is in the area of mythic invention — in the construction of conceptual 'models' of the human universe . . . These were not late developments, after language had proven itself in concrete practical applications; they were among the first" (1991, p.213).

Spencer's principles were adopted in North America by John Dewey, and have received general support from Jean Piaget's theory of development, and have fitted well with what Jonathan Silin has called "our highly psychologized understanding of childhood" (1995, p.99). The result has been a conception of the child as a "concrete" learner, needing to actively manipulate materials, whose understanding is constrained to simple features of local environments, and who can only learn new knowledge that is closely connected to knowledge already learned. This set of ideas has given us the "expanding horizons" curriculum, in which students' understanding is assumed to begin with the local and immediate — which thus forms the content of the early curriculum — and gradually works

"outwards" along lines of content associations away from the students' everyday experience, but even the more distant content must be connected directly to the meaningful activities of the child's everyday environment.

To the outsider such a curriculum might seem like a recipe for provincialism, and it seems not unfair to observe that that is precisely what it has delivered.

If the first major problem with hierarchical-integrative developmental theories when applied to cultural development is that they pay no attention to what children do better than adults, the second is that they pay no attention to the losses that come with the development of new capacities. In the biology-influenced metaphor that currently shapes thinking about development in education, each new stage is simply an elaboration of previous stages, with some additional capacity that changes and improves the earlier condition.

In the process of cultural development, additional capacities are not simply cumulative; they also involve some losses of features of the capacities of the previous "stage". So the development of literacy in cultural history, for example — it is now becoming clear — is not a simple process of adding to capacities available in oral cultures; literacy comes at a price. A part of that price is a loss of the participatory intimacy with the natural world that is common in oral cultures. Similarly the acquisition of literacy by children in our culture is not a simple gain; it too entails losses of capacities they deployed when they lived in the oral culture of early childhood. These are not easy to specify, as our psychological studies of children's development have been focused so exclusively on the process of gains that have been assumed to be all there is to note about "development."

It seems not unfair to say that current developmental theories that have been influential in education have focused attention on what young children do least well — those logico-mathematical capacities that slowly develop

through our early lives — and have largely ignored those things that young children do best intellectually — those imaginative skills attached to metaphor and image generation, and to narrative and affective understanding. If we conclude that Spencer's principles are inadequate in giving us a picture of the child as a learner, to what alternative can we turn for a more adequate conception of children's development as cultural beings?

Mythic poiesis

Piaget's theoretical foundations have come under increasing criticism of late, because they treated development largely as an invariant process of internal development. The external environment was, of course, necessary for the organism to act on and interact with, but the characteristics of the external environment as such received little attention in his theory. These were criticisms aimed at Piaget's work in the 1920s by Lev Vygotsky (1929). Recently — the last couple of decades — Vygotsky's alternative theory of development has received more favorable attention in North America. (The lack of attention earlier may in part be due to Vygotsky's Marxism, and his supporting his theory with quotes from Marx and Lenin.) Basically, Vygotsky argues that the social environment provides the growing child with certain intellectual tools that then are used to mediate the way the world is understood by the child. The main intellectual tool that children pick up as they grow into a society is oral language. The more adequate alternative to Spencer's, and Piaget's, developmentalism, I want to suggest, is a conception derived from Vygotsky.

What I will try to do, then, is consider what intellectual capacities — what tools of understanding — are involved in generating and using an oral language, and considering what guidance we might infer from these for teaching and the curriculum. I will focus on young children who have mastered oral language but whose thinking has not been

influenced by their internalizing literacy as that is practiced in their culture. (Obviously some influences of literacy will be felt by such children, but I think one can recognize significant differences in understanding even in the most highly literate early environment [Egan, 1997]). So, our focus will be on the mind equipped with the intellectual capacities that oral language-use entails, and with the capacities that are commonly suppressed by the development of literacy.

Young children live in an oral culture, of a kind, and their uses of language might be considered, with appropriate qualifications (cf. Egan, 1988), as akin to what we may see in oral cultures throughout the world. So, to put it generally, what, intellectually, comes along with language?

"Language, in a preliterate society lacking the apparatus of a modern information-state, is basically for telling stories" (Donald, 1991, p.257). Our inventory of what comes along with language, then, might begin with stories.

What are stories? Stories are unique kinds of narratives in that they have, in their basic forms, ends that satisfy some tension generated by their beginnings. They can thus fix the hearer's affective orientation to the events, characters, ideas, or whatever, that make them up. They allow us the satisfaction that life and history — which are, without the stories we try to lay on them, just one damn thing after another — deny us. The story was perhaps the most important of all social inventions, in that it provided the bond for languaged people to tie themselves into societies, emotionally committed to shared social and cosmic stories. Stories, basically, are little tools for orienting our emotions. The focus on logico-mathematical thinking in education has helped to disguise the importance of Spencer's observation about the chief component of the mind being feeling.

Languaged people without writing need to preserve their store of knowledge, feelings, hopes, and fears in living memories. To do this most effectively, oral cultures

discovered long ago, one could use a set of techniques that, incidentally, were a part of language itself. So rhyme and rhythm could help the process of remembering — "Thirty days hath November. . .". If one does not have writing, the preservation of lore in the living memory leads to a mind that re-sounds with a store of rhymes and rhythms. Clever and striking formulaic phrases will summarize important principles of behavior — "Many hands make light labor. . ." (Havelock, 1967).

The need to preserve lore in the memory also led to the discovery that language could be used to stimulate vivid images in the mind, and lore coded into such images was more easily remembered reliably across generations. Generating images from words seems invariably to involve some emotional component (Warnock, 1976) — which helps to account for the greater richness we typically experience from generating our own images from text or listening to an oral story than from seeing images presented to us on film or television.

If we consider the kinds of fantasy stories young children are most powerfully engaged by —and it is a rare adult who does not recall in detail, say, Cinderella, while the same adult may remember nothing of the more "relevant", "issues-oriented" stories read to them as children — we may see that their underlying structure is usually a simple binary conflict based on security/fear, courage/cowardice, good/evil, and so on. Now so much has been written lately about binary opposites, critical of their pernicious influence, that I need to be careful in pointing out that the generation of opposites and mediating between them seems to be basic to human thinking. (For a discussion of this issue, see Egan, 1997, Chs. 2 and 6.) Two simple observations might be made about these binary structures; first, they are abstract, and, second, they are affective.

Their abstractness perhaps merits emphasis in the face of the near-ubiquitous assertion in education that young children are "concrete thinkers". That young children do

not commonly use abstract terms explicitly does not mean that they do not constantly use abstractions in their thinking. Indeed, one might reasonably make a case for "the primacy of the abstract" (Hayek, 1970) and for children's ability to make sense of the concrete only to the degree that the concrete elements are tied to some affective abstraction (Egan, 1989).

These, then, are just a few of the intellectual tools that come along with language; they are a few of the "mediators of understanding" young children pick up growing into a language-using society. With metaphor, story, binary-opposition and mediation, affective abstraction, image-generation from words, rhyme and rhythm, we are beginning to construct our inventory of "mythic" tools. They look very like the basic set of tools of "poetic" thinking, of poetic 'making', or poiesis. They are the tools we have traditionally associated with the imagination.

We greatly value imaginative thinking but, particularly in North America. we have accepted for a long time a set of educational ideas, largely derived from Herbert Spencer, that seem hostile to precisely what we value. By focusing on cultural development rather than biological development, the principles of children's learning we infer seem quite different. Just to sketch quite casually some of the alternative principles, we might get:

1. That children are abstract as well as concrete thinkers;
2. That children's thinking is powerfully affective;
3. That children readily understand content organized into story forms;
4. That children are readily engaged by forming images from words;
5. That children are prodigal producers and consumers of metaphors;
6. That children's learning is stimulated by rhyme and rhythm;

7. That children's learning can proceed by forming binary oppositions and mediating them;

(It would be possible to go on with this fairly casual list. I'll stop at 7 because that's how many Spencer enunciated.)

There seem to be significant implications for the curriculum and for teaching that follow from these alternative principles. Due to space constraints, I will here explore just one set of implications for teaching.

Implications for teaching

The first implication, to quote the title of a book I seem to remember seeing somewhere, is that one might begin to think of "teaching as story telling." This is not to suggest that we should spend our time telling children lots of fictional stories, though more emphasis on such stories may be one result of this alternative approach, but rather that we think of the content of the curriculum more as great stories to tell than as objectives to attain. We might, then, think of "story" much in the sense a newspaper editor asks a reporter "What's the story on this?" That is, we will not look for a fiction related to the content but rather seek out the affective meaning — the emotional resonance — *within* the content.

For example, instead of using a planning model derived from Ralph Tyler's (1949) useful, but industry-influenced (Callaghan, 1962) objectives-content-methods-evaluation scheme, we might construct an alternative model derived from some of the principles sketched above:

Mythic planning framework

1. Identifying importance
   What is emotionally important about this topic?
   What is affectively engaging about it?
2. Finding binary opposites
   What binary concepts best capture the affective importance of the topic?

3. Organizing the content into a story form
   3.1 First teaching event
   What content most dramatically embodies the binary concepts, in order to provide access to the topic? What image best captures
   that content and its dramatic contrast?
   3.2 Structuring the body of the lesson or unit
   What content best articulates the topic into a clear story form?
4. Conclusion
   What is the best way of resolving the conflict inherent in the binary concepts? What degree of mediation is it appropriate to seek? How far is it appropriate to make the structuring binary concepts explicit?
5. Evaluation
   How can one know whether the topic has been understood, its importance grasped, and the content learned?

The trouble with this model, without lots of examples (for which, see Egan, 1988, 1989) is that it is hard for teachers to accommodate to after years working with the presupposition that one must begin by stating objectives, preferably in terms that lead to clear evaluation, and that one must order the content into some logical form appropriate for "concrete" thinkers to deal with. It is difficult to begin by locating within oneself something affectively engaging, something emotionally moving, about the content. Yet, I have suggested, that it is only by connecting with that emotional association that the content can be made meaningful and engaging to children. The emotional associations, the affective engagement, with content does not go away as we grow older. These are things that are a part of what comes along with oral language. The model draws attention to those characteristics that we share with young

children — even if our emotional and imaginative grasp on content will often be less vivid. The model tries to put these as central elements for us to focus on when planning.

My experience has been that this first step is very difficult for most teachers. Even those who express enthusiastic agreement with the guiding principles of the model, when they try to use it first they tend to fall back on the old assumptions very easily. It is hard to recognize that what we assume to be true about children is not a result simply of our "pure" observations, but what we see is also significantly influenced by the ideas we have picked up. The most pervasively influential ideas that have influenced how children are seen in this century, at least in educational settings, are derived from Spencer's principles. The difficult part of this model, then, is that it implies also a somewhat different way of seeing the child as learner, and it requires the teacher to cast off what are often the presuppositions of a working lifetime.

Because children are better than we are at some of the intellectual activities to be elicited, we might sensibly ask for their help when we set about the first two requirements of the model. We can guide them to tell us what they find emotionally engaging about the topic to be dealt with, or to tell us what metaphors and images it stimulates. We might design little games or exercises that will elicit such information. We can then use their guidance in constructing the lesson or unit.

Often they will have insufficient information to be able to help us in this way, perhaps knowing about earthworms only that they are slimy and live in the ground. In such cases, teachers needs to reflect on the information they themselves have about earthworms, keeping, as it were, their emotional sensors alert. Is there something effectively engaging about their physical make-up, their habits, their role in the ecosystem, the varieties of earthworms, their strangest features, the longest and shortest sub-species, the numbers in an average plot of land in the area of the

school? What would happen if all the earthworms died off? Having located an emotional response within ourselves to something about, say, the role earthworms play in the ecosystem, we can then usually find affective, abstract, powerful binary opposites quite easily.

Having done the hard work up-front, the rest of the unit or lesson can usually be planned fairly easily. The only important point is to recognize the binary opposites as criteria for including and excluding content, and making sure that all the content we include is built on the clear binary structure. When reading about Hansel and Gretal you would become bored if information unrelated to their struggle between fear and security was introduced. Details of the construction of gingerbread houses would not hold the child's attention, or be meaningful, nor be remembered, as well as events that furthered the plot. Much the same principle comes into play in this model's requirement to make the content take the shape of a story. We will include only what furthers the affectively-charged, binary-structured, story-shaped lesson or unit, as it moves towards a satisfaction of the tension created in its beginning — so we gradually satisfy the tension built into our story of how the humble, slimy, earthworm is the greatest of all farmers and necessary for our survival. As the facts accumulate around the binary opposition between fantastic beneficial accomplishments and simplicity of structure and behavior — perhaps not the best opposition one might come up with for earthworms — the children can gradually appreciate the wonder that the teacher located within herself at the beginning. And the children may sense that wonder more vividly and powerfully than the teacher can.

Conclusion

Plato was well aware that written words were unreliable and leaky vessels for transferring meaning from mind to mind. In the *VIIth. Letter* he described the attraction of

politics in Syracuse as due to the fear that he would find himself in old age as nothing but words. In the *Phaedrus* he told the old story of the god-king of ancient Naucratis, Toth, who was the inventor of writing, taking his invention to Thamus, god-king of all Egypt. Toth was sure Thamus would find his invention wonderful and of great practical benefit. But Thamus rejected it as an invention likely to do more harm than good:

> The discovery of the alphabet will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. Your invention is not an aid to memory . . . you give your disciples not truth, but only the semblance of truth; they will be the hearers of many things and they will learn nothing.

Thamus's insight was that knowledge retained in the memory in an oral culture becomes tied in with the emotions, stimulates images, rides on metaphor, is story-shaped . . . and has all those characteristics discussed earlier in contrast to Spencer's principles. Spencer's principles derive from thinking of children's minds largely in terms of literacy-induced capacities, and forgetting that before they are literate, and also after they are literate, they also have the capacities of orality.

Giambattista Vico's *New Science* (1725) was based on the insight that "primitive" people were not irrational or perverse but were "poets". Their strange myths — to Europeans — were understandable, he pointed out, not as some twisted and failed attempts at logic, as most scholars assumed, but as deploying the tools and techniques of poetry. That is, for humans as a species, and for each of us individually, poetry precedes those forms of thought that rely on literacy. In planning teaching and curricula for children, then, we would be foolish to ignore this.

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Learning And The Imagination

Howard Gardner

GARDNER: I wish that I had a theory of imagination, but I don't. In fact, it's not even a word that I use in my professional work. Of course I use it on the streets like everybody else. So those of you who give talks will know that I had a choice when I got invited to give this talk — either to give my usual talk and throw in the word imagination every few minutes or so, like an incantation; or to do some stretching, and I am going to do some stretching.

I want to say a bit about my background. I began my life as a psychologist. Over the last fifteen years I've turned into what we call an educationalist, somebody who is not involved with the K-12 classroom everyday, but someone who thinks a lot about K-12 education. I have become interested in curricular issues, but not at all to the same extent as Kieran has been. To finish this brief autobiography, I have become very involved in school reform and I think a lot about what's improvable in our schools, particularly our American public schools. And recently I've been doing a lot of work in the area of creativity; and the relationship between being creative, and being responsible about the uses (and misuses) of creativity. I'm going to make seven points today. I will tell you what they are, and then the rest of the talk will be commentary.

First of all, I'm going to talk about my view of the imagination. Second of all, I'll speculate about the processes which I think are involved in churning up the imagination, and this will entail some references to different kinds

Note: This paper is based on the transcript of a talk given at the Touchstone Center on April 13, 1996. It has been edited only in the interest of clarity.

of intelligence. Third of all, I'm going to talk about ideas which develop early in life, not exactly archetypes, but the child's basic themes, theories and the like — the building blocks of the imagination. Fourth I'm going to talk a bit about training — the way in which different stances are trained over the years in different cultures.

Shifting gears, I'll talk about two kinds or levels of imagination — the naked or raw version of the imagination; and the cooked or dressed version of the imagination. I'll talk a bit about the education of multiple representations and capacities and dispositions. In the final part of the talk, I'll try to put together these different elements into a way of thinking about the imagination.

On to point one: What is imagination? Like almost everything else, it's obvious once you begin to pay attention that the word imagination is used in many different ways, even by the same people, and most of us don't worry very much about whether these ways are consistent with one another. That's why we need philosophers!

I recently noted two interesting uses. I went to the Metropolitan Museum yesterday to see the Chinese art exhibit, and the captions described one of these literati from the Ming dynasty. To me it looked like a perfectly ordinary Chinese scroll, because I don't know anything about how to look at Chinese scrolls, but the label on it read, "this artist took the traditional forms and elaborated them with fantastic imagination." Perhaps the artist put a little bit more pressure over here and moved the man two centimeters over there — if you know a lot about Ming paintings, you could see it wasn't exactly business as usual.

Then *The New York Times* ran an editorial today about the hapless flyer, seven-year-old Jessica, whose plane crashed. The editorial writer favored consulting safety before imagination. And this was a reference to the fact that this little girl had lots of imagination about the experience of flying but not much about the need for taking safety precautions.

Now, we can ask whether the literati who's been painting scrolls for thirty years and moved the character a few centimeters to the left, is using the same "mental muscle" as Jessica who knew no fear and wanted to fly higher and higher. As a psychologist I think about the constituents of the imagination as follows. We begin with our senses and our bodies — that's a British empiricist way to begin. If you were Cartesian, you probably wouldn't begin with your senses from your bodies.

And we might say that the bodies give real sensations and the senses give real input, but there's also the possibility of imagery. And imagery, on my definition, entails experiences using the sensory modes or the body which *appear* to be real, but which in fact are not stimulated by any stimuli or objects from the external world. You can see, but you can also shut your eyes and dream. And that's imagery. Not the same as imagination, but a necessary constituent. And I'm going to suggest that you have at least as many kinds of imageries or imaginations as we have sensory modalities and bodily, kinds of input. You get this range of imageries for free by being a human who isn't totally stunted.

By being human beings who live in cultures, we also are furnished with very rich toolboxes. And those toolboxes provide symbols, systems of symbols, literacies, genres art forms and science forms; and because we are lucky enough to live in cultures which are richly endowed with those kinds of tool kits, what we can do in the absence of frank sensory input or bodily stimulation is enhanced. We're not just limited to imagery which comes from having our eyes shut, but still trying to think visually; or from having ears plugged and still trying to hear things. We can furnish our own minds with oral language, with Ming scrolls, with what we see on television, with poetry, with stories, and so on.

Many of the people who influenced me, like Susanne Langer and Ernst Cassirer and Alfred North Whitehead,

have postulated that basically human beings are symbolic junkies. And unlike the earthworms that probably just trudge along and occasionally hit a bump, we have all kinds of symbols which we can play around with in our heads. The cornucopia gives the imagination a lot of raw material.

However, we have to ask, what's the motivation and what's the disposition to use symbols imaginatively? We have the capacity to imagine and to deal with imagery and to stimulate whatever our imaginations are and wherever they are: but are we going to do it, how often are we going to do it, for what purpose are we going to do it? That's open. It could be that after a certain point of development, certain critical paths stop firing; I think it's much more likely that the neural/psychological paths still could fire but for various reasons they don't, because we're not very much inclined to do it and we don't get a lot of support to do it, and maybe we get a lot of support not to do it. So I certainly would not blame the decline of a nervous system before we explore what the culture can do to preserve these human capacities.

To summarize: that's how I think about the constituents of imagination. Senses, bodies, what we can do even when we're not being externally motivated, how can our senses become enhanced by the toolboxes — and then it's our decision whether we want to use them or not.

I want to turn now to the processing mechanisms whereby we can deal with, manipulate what our senses give us and operate on symbols that we get from the culture. And as you may have anticipated, these processes are what I call the different kinds of intelligence. I believe that as a species, we human beings have evolved to make sense of the world in a number of different kinds of ways. I call these intelligences. They evolve because of the kind of world in which we live, but while that determines the kind of content to which these intelligences resonate, that content is way underdetermined by the physical world in

which individuals live. Accordingly, we're free, given these processes, these intelligences, to make use of them in many different kinds of situations for many different kinds of purposes.

I define intelligence as the capacity to solve a problem or to fashion a product that's valued in at least one culture or community. This is a very different way of defining intelligence than people who are in psychology usually do. Think of us as a species which has evolved a number of different mechanisms inside the mind/brain which allow us to solve problems or to make things. Making things includes works of art, works of science, running a meeting, building a building, anything like that.

My definition is a culturally relative definition: long as the culture values these problem-solving and product-making capacities we can then call that ensemble an intelligence. I identified seven intelligences a dozen or so years ago. Each of us has all intelligences, but each of us valorizes a different intelligence.

Let me run briefly through the intelligences. Poets are individuals who exemplify linguistic intelligence. They create all kinds of new worlds in words. And that's a lot of what Richard Lewis does in his work with children, and lots of what poets do. The poet's stock and trade is the imagination that's built out of the words that he or she has at their disposal. It's the lexicon that defines what they can do imaginatively.

Next is Logical-mathematical intelligence, the kind of intelligence that mathematicians, logicians, scientists have. Our habits of language often encourage us to distinguish science from imagination. But anyone who actually does science knows that it's very much an exercise of imagination. In science you use a certain kind of symbol system, and you use certain kinds of theories, and conduct thought experiments. Einstein's achievement grew out of a set of thought experiments. Indeed his thought experiments were much more important to him than the actual

measurements. He didn't believe in measurements that weren't consistent with the thought experiments. He was a very good scientist, and he was often right even when the data couldn't immediately support him.

A third form of intelligence is termed *musical*. The best way to understand musical imagination is to analogize it to the language imagination. Musicians work with tones, and timbres, and rhythms; they can organize them in their mind, and particularly in new ways in which they put them together, ways in which nobody's ever heard them before — that's the musical imagination at work. Musicians play with sounds, just like the poet is playing with language. Beethoven is a wonderful indication of the musical imagination. Not only was he still able to hear things after he became deaf because he had very vivid musical imagery; he could even create new pieces and hear them in his own mind. But he certainly wasn't born that way. He was born with the capacity to do it, but it took thirty or forty years of hearing which allowed him to build up the imagery to such an extent that he could hear and compose in his mind's ear.

Spatial intelligence is the capacity to find your way around in space, to imagine large spaces and more constrained spaces, like the chess board. Architects, sculptors, geometers, surgeons, all use spatial intelligence. And of course, if you want to be a good chess player, you'd better have a vivid spatial imagination so that you can not only anticipate what's going to happen several moves down the pike, but also that try you out gambits which have never been tried out before.

You may begin to see what a wonderful gift we have in these different intelligences, because they provide different kinds of imaginations, which we can use as we want. Somebody who puts on a complex opera, a director of an opera is constantly using a whole range of intelligences in as imaginative a way as possible, including personal and aesthetic intelligences.

Let me mention a fifth intelligence — called bodily-kinesthetic. We all use our body, but we can imagine body use even when we're not using it explicitly. And there are certain people like actors and dancers and athletes who are constantly imagining moves they can make, trying them out, seeing what they're like. Indeed, even people who have the misfortune of being paralyzed, either temporarily or permanently, can still imagine bodily movement.

The last two intelligences, circa 1983, were termed the personal intelligences: interpersonal, understanding other people; and intrapersonal, understanding yourself. Clearly, most of understanding our self involves our imagination. We create very personal kinds of symbol systems, so much so that probably no two people in the world could think about themselves in exactly the same way. But if you're anything like me, a lot of your imagination is intrapersonal. I'm going to meet Richard, what am I going to say to him? Kieran's going to argue with me — how I'm going to answer. There's a lot of imagination that goes on in our thinking about the world of human beings, and especially when you have intense encounters with somebody, your therapist, your spouse.

And while we don't all think about imagination exactly in the same way, if you just think about what a director does in trying to figure out how to do a scene, the many ways in which a scene can be done — that's a quintessentially human imagination endeavor.

So, there are at least seven different processes which we have, each of which is capable of a lot of imagination moves. Recently, I've considered two new intelligences. "Spiritual intelligence" hasn't made it yet, though a form called "existential intelligence" may qualify. But I recently concluded that there is a naturalist intelligence. Charles Darwin epitomizes it. The naturalist is an individual who sees the world of flora and fauna, the world of nature, and can make very fine distinctions in it. (Parenthetically, I think the whole world of consumerism actually is based

on the naturalist's intelligence. It's been appropriated by McDonald's and so on, but a talking rabbit is a wonderful example of what happens when you take two natural categories, really humans and rabbits, and you cross them, so to speak. And that's the naturalist's imagination at work.) So Charles Darwin, John J. Audubon, Rachel Carlson are people with very vivid kinds of naturalist imagination.

So to conclude my second point: we've got a lot of machinery in here which allows a lot of imagery which can be food for imaginations working individually or working together.

But how about the actual content of the imagination? What do the imaginations work with? And my claim here, is that we get the content from the physical world in which we live, the things that we see around us, the flowers, the water, the Jackson Pollacks, the ambient noise. That's the content. And much of the content comes to us from the symbolic forms which are elaborated in the culture. The stories we hear, the plays we go to, the works of arts we see in museums, the food that's presented to us on television, on the street, on the billboards. I don't have to tell people who live in New York about it, because that's *why* you continue to live in New York. Because you're very hungry for lots of kinds of content.

I believe we're born with the potential to form basic archetypes based on the kinds of things we see in the physical world and hear about and read about and are told to and the like. There's no need to say that these are actually built into the brain. And these archetypes can be expressed not just in language, but in the range of human symbolic forms.

A confession. I have an ambivalent relationship to the mind of a five year old. On the one hand, I love it. I think it's the most interesting mind in the universe. And if I could understand the mind of a five year old, I would be very happy to retire. It's fascinating. In many ways it's wonderful, rich and creative and imaginative and fantastic; as

Kieran points out, either by necessity or by cultural choice, a lot of its richness becomes attenuated as we get older.

But it's also the case that there's a lot of stuff in the five year old mind which is, from my point of view, quite non-productive. Perhaps dangerous. Hapless Jessica, the pint-sized flyer who crashed, obviously at a deep level believed in her invulnerability. That belief is wonderful, but that's why we shouldn't allow seven-year-olds to go flying, because we aren't immortal.

Let me talk a bit about the five-year-old unschooled mind. The claim is that, even those of us who are adults and don't look at all like five-year-olds, often have a very vivid five-year-old mind still in us. Freud convinced most of us that even though we may look "all grown up" we still have the feelings that we did when we were five years of age. In fact, if Oedipus Rex is right, we still have the feelings toward our contemporaries that we did toward our parents and our siblings when we were young and foolish.

Even though there's a lot to the stage notion of Piaget, the data from research that I have examined suggests that it's very hard to eradicate some of the material that populates the mind of the five year old. Some of that's good, because some of what's in the five year old mind is wonderful, but some of that content is not so desirable.

Take, for example, the theories, the theories that young children develop. They're wonderful theories, they're very delightful, but they're often nonsense. The theory of matter, for example, is that the earth is flat; or that if I have two objects of different mass, and I drop them at the same time, the one of greater mass will fall more rapidly. A very intuitive notion, but it's not correct. Or if I flip a coin, the reason the coin goes up is there's a certain amount of force in my hand, and I transfer that force to the coin, and the coin kind of slowly dribbles away the force and when the force is all gone, it just drops with a thud. If you don't believe that naive explanation, then you obviously have a schooled mind, and that's good

in certain ways. You don't want to carry around notions that are fallacious.

Consider a theory of life — if it's moving, it's alive: if it's not moving, it's dead. If it's on a computer screen, who knows? It's a very powerful theory that five year olds develop and it's very hard to eradicate. Another biological misconception: it's perfectly okay to eat this hamburger because I don't see anything moving in it. That's a very five year old way of thinking about things. You know, if you can't see it, it can't do you any harm. That's a five year old view.

Finally, a theory of mind holds that we all have minds. If you look like me, then your mind is like mine and you're good. If you look different from me, then your mind's different and you're bad. A very powerful notion, very hard to shake.

The unschooled mind is what every five year old starts with. The claim of my book, *The Unschooled Mind* is that many of us have great difficulty moving beyond that because this early phase proves very powerful. The early theories are like engravings in your mind brain, and engravings are hard to eradicate. What happens in school is the engravings get covered with a lot of powder, with a lot of E.B. Hirsch cultural literacy powder — and this makes it look as if those engravings have been rubbed down. But in fact, blow away the powder, the engravings haven't changed. And that's why the mind is in many ways still the mind of a five year old.

In my educational work, I've shown that in different parts of the curriculum, we uncover different kinds of unschooledness. In science we have misconceptions of the sort that I mentioned. The common misconception of evolution is a never-ending march toward greater perfection; if you want to know what's most perfect, just look around at a fellow human being. That's a very powerful misconception in sciences.

Kieran has already given you an example of rigidly

applied algorithms in math. There are the kids that know about decimals, if they have to apply in a certain, restricted way; but if they actually have to draw on that knowledge when no one signals them to "use decimals," they haven't got a clue about what to do.

Let me use myself as an example. I was a good math student. When I was in high school I learned something called binomial theorem. I was able to solve a lot of problems with it. I never had a clue about what it meant, and if my life depended on it, I wouldn't be able to use it now, but that's how many of us go through school. We commit to memory rigidly applied algorithms which we know when to use if the right cue is given, but if we happen to encounter a situation on the street we don't realize that that knowledge should be activated.

And finally, the other areas of the curriculum, including the arts, humanities and social studies. We have our scripts and stereotypes — well entrenched notions of the way things usually are, like a birthday party or a visit to the dentist or a good guy-bad guy script in a Grimm's fairy tale. The difficulty arises in relating to those examples which violate the basic scripts and stereotypes. Or when we initially appreciate the deviation of a new story from the standard script, after awhile we find that the new understanding dissipates and we return to the earlier scripts and stereotypes.

So alas, if either Kieran or I give you some good ideas today — a lot of research shows that six months from now, if you remember anything at all, it'll probably have settled back to your old ideas rather than being transformed to encompass the new ones.

In many ways, the conservatism of the unschooled mind is very adaptive. The species would probably have died if we kept changing our minds every day about things, but the mind is very set in its ways, and this may turn out to be a restriction on the imagination. We lose a lot of material as we get older, and some of that content is

sadly lost. But some of it's actually happily lost — because it's just as well if we don't have these misconceptions and scripts and stereotypes, because they really make us into bad thinkers.

As my fourth point, I want to talk a bit about cultural messages. You've got the mind of the five year old, which in many ways is wonderfully creative, evocative, imaginative. On the other hand, you've got a lot of ideas which have already settled into your mind/brain and they're very difficult to eradicate. What does the culture do with this?

My wife, Ellen Winner and I became very interested in a different culture, the culture of China. China, particularly as embodied in the P.R.C., has very different attitudes towards the arts than does the West. And in particular, most of us have a *frisson* of pleasure when we see the artwork of five, and six, and seven year olds. In China, if you take a look at the art of five year olds, it's very, very different. It's highly conventionalized. And there is no encouragement for what we would call imaginative art. In fact youngsters are not even allowed to execute designs or patterns or abstract work. They are told they can't, and if they do do it, then parents or teachers say "well, you're drawing a picture of a plate, or a rug or something," and they give it like a real life manifestation.

I want to show you some photographs which we took of classrooms in China. These indicate what a very rigid training system can do, but also show surprising degrees of flexibility. This is a Chinese class of fifty first graders. It's an art class. In this class the youngsters are learning how to draw a goldfish. And if you notice, there's a bowl in front of them with a goldfish in it. There is one similarity between American and Chinese kids — nobody ever looks at the goldfish in the bowl, unless they are so instructed. Instead, they look at the teacher. The teacher in the front of the room shows these kids exactly how to draw that fish — step by step. You see the finished one up on the board, and then you see colored marks, with Arabic numbers on

it. Being told exactly how to hold a brush, exactly what order to make the brush strokes, and so on. And then to help out further, the students have a book in front of them which shows them exactly how to do it. And many youngsters have parents at home with a book and they've been practicing this exercise beforehand.

In today's lesson, the six year olds are given a blank page and they're told, draw a fish. The teacher comes around and helps. There's a phrase in Chinese — you teach by holding the hand. And by the end of the class, every kid has rendered a perfectly good fish perhaps because Chinese adults believe in "error-free learning."

After beholding classes like this with some disbelief, Ellen reasoned as follows. These children have picked up a lot of technique, but they've only picked it up so far as we know from drawing shrimp and chrysanthemums and the half a dozen other prescribed objects. Let's say we give them something to draw that they've never, ever seen before. How would they draw it? And we happened to have an object which they'd never seen before — my son Benjamin's ultra-modern Italian made stroller. So, we brought the stroller into the classroom — an object that is Western, it's new-fangled, it's modern, it's rectilinear, and none of the traditional subjects for drawing are rectilinear — they have the soft contours of natural objects. Would the kids be able to draw it?

What we found is that these six year olds *can* draw such objects and they're amazingly good, as you can see in the next several slides. Now, what's interesting is, they're all different from one another. So there's really quite a variety. The Chinese children have gotten some technique, but it hasn't become embalmed, as it were. The engraving hasn't become so deep that it can't be flexed and changed. So what I concluded in my study of arts education in China and the United States, is this: you can have a training approach to education, where you lay out exactly what to do in the precise order. You can have a much more

flexible one — we'd call it a progressive or a Dewey approach — where you just throw out ideas or challenges and let youngsters draw on their own resources to solve problems. I concluded that either option left on its own is not very productive. You need instead an educational system which recognizes both the need for some fairly algorithmic skill training and for some encouragement of imaginative leaps, dealing with things you've never dealt before and rising to new kinds of challenges.

We assume in the West, almost invariably, that you've got to start with the freeness, the flexibility, and the exploration and only then give people some skills. But my time in China convinced me that what is really important was not that you begin with one or the other emphasis; but rather that you feature an oscillation. And if you begin with a period of training, with skills and so on, then you've got to have a compensatory time of loosening and of reflection and new kinds of experimentation; otherwise you end up becoming extremely rigid and inflexible. However, if you start with the other approach, the American "progressive" way, eventually you have to pick up skills, some training, some rules. Essentially you have to learn what the culture has already learned, because it's unrealistic to reconstruct it all yourself. And the order isn't as important as the continued oscillation between one approach and the other.

Let me turn now to my fifth point — the two forms of imagination. Without help from us, given their own sensory systems, their own language, and their exposure to whatever symbol systems and genres exist in their culture, children will develop the wonderful, naive, unschooled kind of imagination. It's to be prized and hung up on the refrigerator door — and it's a very precious gift. But with very few exceptions, if that imagination is simply allowed to continue unconstrained, you end up having somebody who likes very much what they do, and whose parents like it very much, but the rest of the world can't really

relate to it. There needs to be an apprenticeship, a training period, an educational period, a period of discipline or disciplines, in both senses of the word.

You're going from being a novice to being a master in a particular system or domain or craft or art. Here lies the difference between the expert and the creator. There's nothing wrong with being an expert. None of us really wants too much creativity when we are under the surgeon's knife or in the airplane — even sitting here in this room, you'd like things to work. The person who's creative, is somebody who has the technical skills, who has mastered the domain, the genre, but who is disposed to go beyond that technical skill — to challenge what's been established in the domain, what's been established in the culture, what's been established historically.

That's where the developed imagination comes into play. It may actually be the same set of mechanisms which were there all along, but it's no longer brought to bear on the unexamined data from the world. Rather, it's brought to bear in light of the skills and the knowledge that have been acquired as a result of being a good student, whether it's learning how to draw those fish or practicing your poetry or studying science in school or at the Museum of Natural History. And indeed, in my studies of the most creative people — people like Picasso or Martha Graham or Einstein — these are individuals who don't really begin by wanting to create something new for its own sake. Rather, they are driven to create something new — they find that, what they're trying to do, for the problem they're trying to solve or for the idea they're trying to express, the current means aren't adequate. They have a choice of giving up and selling shoes; or sticking to the old knowledge they have and doing some patchwork; or staying with something that's so difficult.

Creative individuals end up saying to themselves, in effect: "I've got to take my knowledge and preserve what I can of it, to construct enough that's new so that I can really

solve the problem I'm interested in or explain the phenomenon I'm interested in or capture the mood or the feeling or admit the statement that I want to be able to make." And it's a truism but no less true for that, that one of the things that people feel at those times, when they're creating, as I put it, a new kind of symbol system, E = mc2, psychoanalysis, modern dance, etc. is the fervor which they felt when they were much younger — they reach back to the time when they weren't looking for answers from the textbook, so to speak, but really trying to make that initial theory clear to themselves.

Note that nobody gives young children these initial theories that are wrong. Rather, they create these theories themselves as a way of making sense. So, I find it useful to think about a first draft or "raw" imagination, which we get for free, just by being human beings who haven't been deliberately stunted or raised in closets. It's up to the culture, whether one chooses to put them on the conveyor belt to expertise, or gives them time to be little Deweyians.

Ultimately, if these individuals are to make statements or to create things which are of interest not just to themselves but to other people, they have to master what's been accomplished in the society before. On the average, such mastery takes about ten years. And then they have the option of just being an expert, which is what most of us are, (and on whom society depends); or we can bracket that expertise, so that they can come up with a solution to something that nobody has solved before, or create an expression or formulation which nobody has conceived of before. That's what I would call the developed form of imagination, which is really breaking new grounds, just not for yourself, but for the domain in which you work.

Let me close with a few aphoristic thoughts. If you want students to understand, you need to spend time on topics, themes, disciplines. You can't flip from one subject to another; you have to present it in lots of different ways. I call this phenomenon "different entry points to the same

room." So if you're trying to explain, say, evolution or the imagination or understanding to a group of students, you have options: You may use a narrational approach, an approach built upon stories. But there are approaches built upon numbers, quantitative relations, logical implications. There are what I call foundational approaches: asking very basic questions: "What's this all about? Why is it important? How does it relate to what we did before? How does this connect to my life? Aesthetic, what does it look like? Feel like? How is it organized? How beautiful is it? How harmonious is it? Et cetera."

Another approach can be called "hands on." How does it feel to actually do it? To build it? To construct it? To be in it? And so on.

Each of these "entry points" verbalizes a different form of imagination — after all, they use different kinds of intelligence. This is the very important part of education. If we can only represent something one way we do not really understand it. And for all of us who are teachers, the most productive moment occurs when a student says, "I don't understand that." If you (as a teacher) just repeat what you did before, whether it's verbal or graphic or so on, and you can't do it any way, you don't understand it very well yourself. It happens to all of us. But that's good, because it says, "you've got to prove your own understanding." If, however, you can do it and show it and portray it and present it in many different ways, you have got an enhanced understanding of yourself, and two wonderful things happen with students: First of all, you reach more students, because students do have different imaginations and different intelligences. Second of all, you give youngsters a sense of what it's like to be a creator, an expert. Because an expert is somebody who can always think about things in more than one way.

One more point. I believe a creator is somebody who can take not just one representation, but a number of different representations and put them together in a new

way. And I think that the developed imagination, the imagination which we extol, is an imagination that traffics in multiple representations, using multiple symbol systems. People who are thinking about an issue that is important, they're trying to create something which will be valued, and they're putting representations or imaginations together in a way that hasn't been done before.

The most important moment in a child's education is a crystallizing experience, when a child connects to something, that engages curiosity, and stimulates further exploration. We're trying to engage the imagination, or the potential imagination of a child, of every child. For some kids it's making that connection to an engaging phenomenon that spells the difference between a life that's engaged, meaningful, and one that is not. The sad thing, which so many of our poor kids and our rich kids have in common, is that they become bored and alienated and not connected to things. The educational challenge entails connecting to the child's potential imagination and mobilizing it so it can be productive and probe further and deeper.

The final point I want to make is that none of this will happen — this cultivation of the imaginations, the raw or the cooked, the native and the unschooled or the expert or the creator — unless there's a milieu in which such activity is a reasonable thing to do, it's a thing that's encouraged, and it becomes a disposition. I don't think anybody is born particularly imaginative or particularly unimaginative. What happens in the first years of life are very, very important. What happens throughout school, all the way up to professional training, is very important. As my colleague David Perkins has said, one of the major things that determines whether people are creative is whether we *want* to be creative. Before we think "Well, everybody wants to be creative," in fact, being creative is not only hard work, but it's risky. You can fall on your face, and you get criticized, and that's a hard thing to do, and that's why most of us don't make that move.

Imagination is funny. Most of us happily live in a society where nobody tells us what to daydream about, so I hope you've all had some good daydreams in the last hour. And nobody tells us (except our therapists) what we should dream about at night. But it's whether we take those imaginations — whether it's the Wright brothers or poor Jessica or whoever — and we go public with them: that's an individual decision. My own philosophy holds: we need to create an environment where that's encouraged, rather than one in which it discouraged or absolutely forbidden. And I think our role as educators is to decide where we stand on that, and be prepared to deal with the consequences. Thank you.

About the Contributors

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Howard Gardner is the author of many books and has had a profound influence in educational circles with his theory of multiple intelligences. He is Professor of Education and Adjunct Professor of Psychology at Harvard University where he is Co-Director of Harvard Project Zero. His books include *The Arts and Human Development* (Wiley-Interscience,1973); *The Unschooled Mind* (Basic Books,1993) and *Leading Minds: An Anatomy of Leadership* (Basic Books,1995).

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Elizabeth Sewell is a poet and novelist and has written extensively on the nature of metaphor and poetic thought. She has been on the teaching faculties of Vassar, Fordham University, Princeton University, Tougaloo College and the University of California. Her books include *The Structure of Poetry; The Orphic Voice: Poetry and Natural History* (Yale University Press,1960) and *The Human Metaphor* (University of Norte Dame Press,1964).

Paul Shepard, who died in the summer of 1996, is considered to be one of the major thinkers of the environmental movement. His work, spanning forty years, was concerned with our relationship to the animal world and the thinking and practices of primal cultures. He taught at Pitzer College and Claremount Graduate School in California and was the author, among others, of *The Tender Carnivore and the Sacred Game* (Scribners,1973); *Thinking Animals: Animals and the Development of Human Intelligence* (The Viking Press,1978); *Nature and Madness* (Sierra Club,1982); and *The Others: How Animals Made Us Human* (Shearwater Books,1996).

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